

VOL. 17

1964

the Sea Swallow



BEING THE ANNUAL REPORT
OF THE ROYAL NAVAL
BIRD WATCHING SOCIETY

PUBLISHED MAY 1965

ROYAL NAVAL BIRD WATCHING SOCIETY
(Affiliated to the British Trust for Ornithology)

PATRON

His Royal Highness The Duke of Edinburgh, K.G.

EXECUTIVE COMMITTEE

1964

President :

Admiral Sir N. S. Henderson, K.C.B., O.B.E.

Vice-Presidents :

Commandant Margaret Drummond, O.B.E., HON. A.D.C., Director W.R.N.S.

Vice-Admiral G. M. B. Langley, C.B., O.B.E.

Commander H. E. Morison, D.S.C., R.D., R.N.R.

Lieutenant Commander Peter M. Scott, C.B.E., D.S.C.,* R.N.R.

Chairman :

Captain G. S. Tuck, D.S.O., R.N. (retd.), M.B.O.U.
(Address. Prattendens, Bury, Pulborough, Sussex)

Vice-Chairman :

Captain R. Casement, O.B.E., R.N. (retd.)

Hon. Secretary and Hon. Treasurer :

Lieut. Commander E. S. W. Maclure, R.N. (retd.)

Editorial and Advisory Members :

Surgeon Lieutenant J. G. Harrison, R.N.R.

Captain P. P. O. Harrison, M.N.

Surgeon Lieutenant N. Rankin, R.N.R.

Engineer Lieutenant N. C. Wain R.N. (retd.) (Ocean Bird Plot)

Dr. W. R. P. Bourne, M.B.O.U. (R.N.B.W.S. Sea Bird Reports)

The following Ornithologists have kindly consented to assist the Society in an advisory capacity:—

James Fisher, Esq., M.A., M.B.O.U.

W. B. Alexander, Esq., M.A., M.B.O.U.

Professor V. C. Wynne-Edwards, M.B.O.U., A.O.U.

Dr. B. B. Roberts, M.B.O.U.

E. M. Nicholson, Esq., C.B., M.B.O.U.

D. J. Watkins-Pitchford, Esq., F.R.S.A., A.R.C.A.

R. M. Lockley, Esq., M.B.O.U.

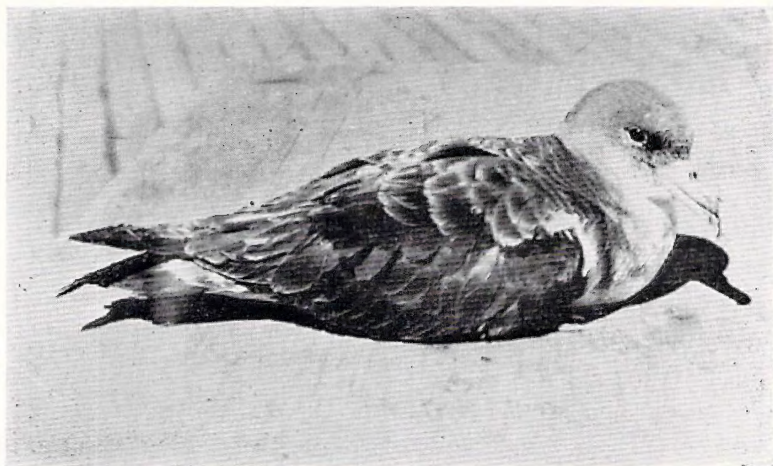
MEMBERSHIP

For details apply to the HON SECRETARY, R.N.B.W.S.,
'Melrose,' 23 St. David's Road, Southsea, Hants.

H. G. Walters (Publishers) Ltd.,
Market Square, Narberth,
Pembrokeshire.

CONTENTS

	<i>Page</i>
EXECUTIVE COMMITTEE	1
FOREWORD	5
EDITORIAL	6
OBSERVATIONS OF SEA BIRDS	
By W. R. P. BOURNE, M.A., M.B., B.CHIR., M.B.O.U.	10
REPORT OF LAND BIRDS AT SEA	
By CAPTAIN G. S. TUCK, D.S.O., R.N., M.B.O.U.	40
CRUISE OF R.R.S. DISCOVERY IN THE INDIAN OCEAN	
By R. S. BAILEY, B.A., M.B.O.U.	52
BIRDS SEEN DURING AN EAST TO WEST TRANS-PACIFIC CROSSING along the Equatorial Counter-current around latitude 7°N. in the autumn of 1960	
By CAPTAIN W. F. J. MORZER BRUYS	57
BIRDS SEEN DURING A VOYAGE FROM BALBOA TO JAPAN AND THE EAST COAST OF MALAYA	
By M. E. JONES, SECOND OFFICER, M.N.	66
TWENTY-SIX THOUSAND SQUARE MILES OF BIRDWATCHING	
By CAPTAIN P. P. O. HARRISON	73
ASHORE IN THE OUTER HEBRIDES	
By LT. COMMANDER W. A. J. CUNNINGHAM, R.N.R.	77
SHORT NOTES: Bird notes from a submarine at the Arctic ice edge by Lt. R. G. Menzies, R.N.: Terns on Khubbar Island, Persian Gulf, 1958-1959 by V. A. D. Sales: Some observations of land birds, Black Sea, 1964 by Captain E. F. Aikman	80
HERE AND THERE WITH THE BIRDS	
FROM THE EDITORS LOGBOOK	85
EXTRACTS FROM METEOROLOGICAL REPORTS	86
PHOTOGRAPHY OF BIRDS AT SEA AS AN AID TO IDENTIFICATION	88
R.N.B.W.S. REPRESENTATIVES OVERSEAS	90
FINANCIAL STATEMENT	92
NEW MEMBERS 1963-1964	94



TWO RATHER SIMILAR SHEARWATERS
NORTH ATLANTIC or CORY'S SHEARWATER

Photo: R.N.B.W.S.—Capt. D. Stam

Note: Grey-brown crown and sides of neck. Yellow bill.



GREAT SHEARWATER

(At nesting burrow, Nightingale Island, Triston da Cunha)

Photo: R.N.B.W.S.

Note: Dark cap, white collar and white at base of tail, dark bill.

FOREWORD

It must be evident to all who read 'Sea Swallow' that R.N.B.W.S. has not been standing still during the past year. To those, and there are still many, who are not fully conversant with its aims and activities, I would suggest that the short R.N.B.W.S. 'Prospectus' recently printed, and obtainable from its Hon. Secretary, would be of interest.

The Society continues its twofold purpose of building up accurate information of the presence of sea and land birds in the oceans, and the encouragement of newcomers to become ardent and accurate birdwatchers.

Such enterprises as the linking of records of bird observations with oceanographic surveys, as in the 'Navado' operation, and the continuing analysis of reports from members, many of whom have now graduated into experienced and critical observers, pursue the first objective. But I am glad to see that the second objective is not overlooked. Both H.M. Yacht Britannia and several other H.M. Ships have called for and been supplied with report forms and supporting information covering their cruises for the benefit of new observers on board.

I am glad to see too that Captain Harrison's guide to sea birds on the South Pacific sea route from New Zealand to Panama is proving useful. In reading some of the notes on birds in ships' meteorological reports it is pleasing to see such remarks as "Identity established through Harrison's 'Sea birds of the South Pacific'."

When the Society was first established the slogan ran "To a sailor every sea bird is just a bloomin' seagull." To-day, and I quote from a source for the sake of whose safety I shall refrain from disclosing, "I am distressed by the profound ignorance of my brother officers who seem to be without any clue at all as to what they are looking at."

R.N.B.W.S. clearly still has much useful work to do! I send my best wishes to all members in the year ahead, and my appreciation of their valuable contributions to the Society.

Nigel Henderson.

Admiralty House,
Mount Wise,
Plymouth.

EDITORIAL

STATE OF SOCIETY

Seventeen new members have joined and two corporate memberships enrolled during 1964. Allowing for members "lost or gone astray" our total membership stands at 277.

In a Society whose membership is confined to those whose profession is, or has been, directly connected with the sea, some may think that there comes a time when membership of those interested in bird study may reach its final peak. We feel sure, however, that this moment has not yet arrived.

It would be a great pity if it had. To do more justice in publicising the information that present members are supplying we need a larger membership roll to offset the pinch on our hard won bank balance due to increased costs in printing and other services. The cost of each copy of *Sea Swallow* alone in 1963 was more than some members are asked to subscribe annually! and R.N.B.W.S. has not altered its small annual subscription in the past 13 years!

A wider dissemination of our activities in the right quarters to interest would-be members is surely one course open to us. We are greatly indebted, therefore, to our Vice-President and Master of the Honourable Company of Master Mariners, Commander H. E. Morison, and to Doctor Ronald Hope, Director of the Seafarers' Education Service. Through their good offices the Seafarers' Education Service has agreed to take up and distribute annually within their library service copies of *Sea Swallow* to a number of shipping lines. This year an additional 236 copies together with the R.N.B.W.S. 'Prospectus' will be distributed to the fleets of the New Zealand Shipping Company, the B.P. Tanker Company including B.P. Clyde Tanker Company, Shell Tankers and the Constantine Line. We take this opportunity of thanking these Shipping Lines for their co-operation.

In addition, the Blue Funnel Line (Alfred Holt and Company) have taken out Corporate Membership on behalf of the Midshipmen of their fleet, of whom there are some 300.

R.N.B.W.S. PROSPECTUS

A prospectus, printed and folded in the manner of our bulletins, has been produced with the object of drawing attention to the Society. It includes very briefly the history, aims, activities, constitution, membership and publications.

Copies can be obtained from the Hon. Secretary.

REPORTS FROM SEA

As members will know, all reports come to the Editor in the first place. It is a stimulating experience, and I much appreciate the letters that so often come with them. The hard work in studying them is done by Dr. W. R. P. Bourne and Engineer Lieutenant N. C. Wain at the 'Plot.' The following numbers of reports from sea passages have been received since 1st January, 1964:

Standard Sea Report Sheets (sea birds)	43
Census Sheets (sea birds)	26
Sea Report Sheets (land birds)	41
Reports on birds examined in the hand. Sea birds	10
Land birds	20

REPORT ON A BIRD EXAMINED IN THE HAND

The original form has been revised and enlarged in detail. The new form (revised 1964) is now in operation.

PROJECTS OF INTEREST

THE SMITHSONIAN PACIFIC PROJECT

(Smithsonian Institution, U.S. National Museum, Washington 25, D.C.)

The Smithsonian Institution has kindly been keeping us informed of their all embracing survey of the avian populations covered by the project. The primary area of interest in the Pacific lies between the 150°W and 180° meridia of longitude and between 30°N and 10°S latitudes. This is an area through which members of R.N.B.W.S. rarely pass. Captain J. B. Mitchell, however, is reporting on his sea passages in the general area direct to the Institution.

THE INTERNATIONAL INDIAN OCEAN OCEANOGRAPHIC EXPEDITION

We are indebted to the National Institute for Oceanography and the British Ornithologist's Union for permission to publish here a preliminary account by Mr. Roger Bailey of his observations as Official Ornithologist on R.R.S. *Discovery* in the Indian Ocean, which should be of much interest to the many members who supplied advance information and supplementary observations for the area.

We were very glad to receive too from the Commanding Officer, H.M.S. 'Owen,' (Commander D. W. Haslam, R.N.), a copy of a birdwatching report during the ship's visits to islands in the Seychelles Group. No members of R.N.B.W.S. were on board, but the principal observers, Lieut. J. W. Leach, R.N., Chief Petty Officer R. Worrall and Able Seaman R. W. Thomas combined to record many interesting observations.

REPORT ON FIELD TRIP TO BLIGH WATERS (NORTHERN FIJI) ON H.M.S. COOK—By F. C. Kinsky, Dominion Museum, Wellington, N.Z.

Mr. Kinsky spent one month on board H.M.S. *Cook* as the guest of the Commanding Officer, Commander F. W. Hunt, R.N., during June, 1963, and spent much time with Lieut. Commander R. Morris, R.N. during visits to the islands. We have received a most detailed and informative day-to-day account from Mr. Kinsky.

OPERATION 'NAVADO'

The links between some aspects of oceanographic survey and the distribution of ocean birds in connection with areas of convergence and upwelling waters, sea surface temperatures, currents, surface plankton, etc. are being given expression in 'Navado.' Between 1963 and 1966 H.M.S. 'Vidal' (Captain G. S. Ritchie, R.N.), and H. Neth: M.S. 'Snellius' will be carrying out an oceanographic survey across the North Atlantic between 10°N and 67°N. The suggestion by the Chef der Hydrographie of the Netherlands that 'Snellius' should co-operate with 'Vidal' in the observation and reporting of sea and land birds under the R.N.B.W.S. system is indeed welcome. In this type of operation the use of R.N.B.W.S. Census sheets to record sea bird counts over set periods should provide a good opportunity for collecting data in different areas at different seasons.

ILLUSTRATIONS IN SEA SWALLOW

Following a suggestion that it would be useful to show photographs which compare species which may be easily mistaken, a start has been made in this issue. As yet no member has been able to send suitable pictures of the Madeiran, British or Wilson's Storm-Petrels to compare with Leach's and Galapagos Storm Petrels which we hold. A note on the different aspects in which a bird should be photographed to aid identification is included elsewhere.

REQUESTS FOR INFORMATION

We have received a number of requests for information on sea and land birds to be seen on passages from sources other than members for which it is always a pleasure to do our best to provide lists. We have also provided H.M. Yacht *Britannia* with notes covering her royal cruise to Canada and onwards to the Galapagos Islands, and report sheets for her officers of the watch to make use of. Report sheets have also been sent to H.M.S. *Tiger* and for H.M. Ships *London*, *Lynx*, *Penelope*, H.M. *S/M Odin* and R.F.A. *Wave Chief*.

SPECIAL REQUEST FOR INFORMATION (A CONTINUING INVESTIGATION)

(a) Present distribution and numbers of Scaup (*Aythya marila*) and Common Scoters (*Melanitta nigra*) in Irish coastal waters.

(b) Distribution of Velvet Scoters (*Melanitta fusca*), and proportion among 'rafts' of Common Scoters.

Major R. F. Rutledge, the well-known Irish ornithologist, (address: Moorfield, Ballybrack, Co. Dublin, Eire), has asked if R.N.B.W.S. can assist, particularly as regards the areas of Belfast Loch, Loch Foyle and adjacent coasts. If any members know of persons in ships who would also be willing to assist, please advise Capt. Tuck.

Members recording observations should send records direct to Major Rutledge on R.N.B.W.S. forms (copy to Capt. Tuck).

Note: The white wing patch, both sides, of the Velvet Scoter, so obvious in flight, should make it a simple matter to distinguish them from Common Scoters as they rise from the water.

GENERAL NEWS

1964 has laid additional but happy burdens upon the shoulders of our Honorary Secretary and his wife in the arrangements for the weddings of two daughters. I am sure that members will join in our congratulations to all members of his family, and our admiration for the manner in which the wheels of machinery of R.N.B.W.S. have not hesitated for a moment.

BOOK REVIEWS

"THE WORLD OF BIRDS"—James Fisher and Roger Tory Peterson. Macdonald and Co. (Publishers) Ltd., Gulf House, Portmar Street, London W.1. £5. 5. 0.

Here is a book for the armchair to enjoy at leisure, a book on the

grand scale and in the most imaginative style, spanning the world in a comprehensive guide to general ornithology.

James Fisher's deep knowledge of the background and history of birds from the earliest times, and of the many-sided aspects of ornithology is presented with a wealth of detail in an admirably clear and readable text. As one turns the pages casually one is treated to a galaxy of *illustrations* calling to mind the style of John James Audubon, and in all the beauty of colour and accuracy of form of which Roger Tory Peterson is a past master.

The approach to ornithology tells us, with pictures and diagrams, where birds live in the world, how they are built and adorned, fly, live and feed, their early history and evolution, world distribution, migration and the art of birdwatching in its many forms. Surprisingly one is treated also to chapters on photography, hunting, fowling, aviculture—even clubs and club ties!—and finally the whole range of classifications by Orders and Families with coloured maps of their present known world distribution. An encyclopedia of detailed information.

It is a remarkable example of modern advance in printing and production and I was not surprised to find that it weighed 5 lbs.

"PRELIMINARY SMITHSONIAN IDENTIFICATION MANUAL TO THE SEABIRDS OF THE TROPICAL ATLANTIC OCEAN"—George E. Watson, illustrated by Tina C. Abbott, 108 pages, 1965. Obtainable from the Smithsonian Institution, Washington, D.C.

Last year Dr. Watson joined with R. L. Zusi and R. E. Storer in producing an excellent cheaply reproduced illustrated manual to the birds of the Indian Ocean and its islands. He has now gone on to produce a similar manual for the seabirds of the tropical Atlantic. It shares the many merits of its predecessor, and fills some of its gaps in such fields as the provision of a basic bibliography for the area, an outline of the basic principles of marine ornithology, and instructions for the collection of information on live birds as well as the bodies of dead ones. We congratulate Dr. Watson and his department on their enterprise in the production of two indispensable guides.

G. S. TUCK,

Editor.

OBSERVATIONS OF SEA BIRDS

By W. R. P. BOURNE

INTRODUCTION

Our reporting scheme has now reached a very fair level of stability, and reports of roughly the same quality and variety as in past years continue to arrive at a slowly increasing rate. Their general character is becoming familiar, and since we are growing increasingly short of space for actual observations and original papers by members such as we are including this year I am no longer going to discuss them in detail before listing them in the analysis of observations for each year, nor cite routine observations or discuss the descriptions of birds examined in the hand separately, limiting comments to important new observations and outstanding problems requiring further attention.

The space saved will be devoted to a further step in our development, an attempt to summarise and review current literature on birds at sea in an effort to make our annual report a full survey of contemporary work on marine ornithology. This is going to be far from complete at first, but we are making a start this year with a general summary of some of the outstanding work on individual species of seabirds during the last five years 1959-1965. In time we hope to incorporate in our reports notes of the most important references to all work on all birds at sea and on oceanic islands. We would be glad to hear of things we overlook.

REPORTS RECEIVED IN 1963

These notes cover sea reports, censuses, and bird-in-hand forms received during 1963, with a few back notes left over from previous years from a variety of sources, compiled by the following people, hereafter referred to by their initials:—

REPORT FORMS AND CENSUS SHEETS

- Chief Officer J. H. Agnew. M.S. Cornwall. Southern Ocean, December 1962. 3 pages.
Captain E. F. Aikman. S.S. Beaverglen. Quebec to Antwerp, May 1963. 2 pages.
Mr. J. O. Brinkley. S.S. Cerinthus. S. France-Cape Town-Bombay-Sydney, November 1962-February 1963. 3 pages.
(Mr. G. Bundy. Back notes, England-Durban and return, July-September 1957. 3 pages).
Mr. S. A. Chapman. S.S. Birmingham City. Seven Atlantic crossings, one England-Churchill in August, two England-Montreal via Belle Isle in September-October, four England-Halifax in January-April, one going on to Boston in March-April 1962-1963. 19 pages of first-class notes.
3rd. Off. N. G. Cheshire. M.V. British Osprey. Indian Ocean and Bay of Bengal, 1963. 17 pages.
Lt. P. A. Davis. H.M.S. Wotton. Firth of Forth, September 1963. 1 page.
Mr. E. J. Doyle. S.S. City of Peterborough. England-Aden-Singapore and return, July-September 1963. 6 pages.

- Captain P. P. O. Harrison and officers of s.s. Kent. Some 25 voyages between Britain and the Mediterranean area, usually Syria, nine going on to the Persian Gulf and one the Canaries, January-December 1963. 121 pages of Sea Reports and 59 pages of censuses.
- Mr. R. S. Hawkins. m.v. Regent Falcon. Trinidad to Britain, May 1963. 2 pages.
- Cdr. J. H. Humphreys. H.M.S. Albion. Aden-Mombasa-Singapore, repeated journeys from there to Labuan, Borneo, and return, and then to Hong Kong and return. November 1962-September 1963. 6 pages.
- Mr. M. K. Hunter. H.M.S. Blackwood. Off east coast Scotland, October 1963. 1 page.
- Captain W. N. H. Jarvis. m.v. Prospero. 2 voyages Britain-Churchill and return, August-September 1963. 3 pages of censuses.
- Captain W. A. Kennedy. R.M.S. Tuscany. Britain-Panama-Ecuador and return, October 1962-January 1963. R.M.S. Loch Loyal, Europe-Panama-Los Angeles and return, March-June and again July-September 1963. 10 pages.
- Mr. K. D. A. Lamb. s.s. Sylvania. Five voyages Britain-New York and return, January-May 1963. s.s. Mauretania, four voyages Mediterranean-New York and return May-August 1963. s.s. Franconia, Britain-Montreal and return October 1963. 28 pages.
- Mr. L. J. Macinnes. s.s. Otina. Miscellaneous observations November 1962-February 1963. 2 pages.
- Lt. Cdr. E. G. May. R.F.A. Resurgent. Christmas Island (Line Group) to West Australia, August-September 1962. 2 pages.
- Captain J. B. Mitchell. m.v. Cedarbank. Colombo-New Guinea-Tasmania-Fiji-Central Pacific islands-Panama-Britain. 8 pages.
- Lt. N. Morris and crew of H.M.Y. Britannia. Britain-Azores-Jamaica-Panama-Tahiti-Fiji-New Zealand-Australia-Mauritius-Aden-Gibraltar-Britain, December 1962-April 1963. 5 pages.
- Lt. Cdr. R. O. Morris. H.M.S. Cook. Singapore-Admiralty Is.-Gilbert Is.-Fiji-New Zealand-Fiji-Phoenix Is.-Fiji-New Zealand-Fiji-Gilbert Is.-Fiji, October 1962-August 1963. 17 pages of outstanding notes from the least-known areas of the Pacific.
- (Lt. A. Yorke Norris. H.M.S. Tabard. Back notes, from a voyage Malta-Naples-Colombo-Freemantle-Melbourne-Tasman Sea, August-November 1960. 8 pages).
- (Mr. P. W. Post. s.s. Nieu Amsterdam. Back notes, New York-Europe and return, July-August 1958. 9 pages).
- 3rd. Off. J. D. Simon. s.s. Nyanza. Britain-Suez-Madras and return, Britain-Suez-Karachi-Bombay-Colombo-Trincomalee and return, April-October 1963. 7 pages.
- Captain D. Stam. M.S. Joseph Frering. Nine voyages between Holland and Monrovia and return, August 1962-April 1963. 6 pages notes and 6 pages censuses. An exceptional series of detailed notes.
- Captain R. Walgate. m.v. Beaverash. Observations in the North Atlantic. 1 page.
- (Messrs. A. F. G. Walker and R. Harkness, per P. E. Davies. Back notes from s.s. Leda, Bergen-Newcastle, August 1958. 3 pages).
- Captain W. E. Williams. m.v. Author. Britain-South Africa and return, July-September 1962; Britain-Red Sea and return, December 1962-February 1963. 7 pages.
- Mr. J. G. Worgan. H.M.T.S. Monarch. Britain-Panama-California-Honolulu-Panama-Azores-Britain, July-October 1963. 7 pages.

Reports of birds examined in the hand

<i>Species</i>	<i>Observer</i>	<i>Date</i>	<i>Place</i>	<i>Sea Temp.</i>
Wedge-tailed Shearwater <i>Puffinus pacificus</i>	J. A. F. Jenkins	25. 2.63	20°02'S. 175°01'W.	28°C
Wedge-tailed Shearwater <i>Puffinus pacificus</i>	E. G. May	6. 9.62	05°15'S. 99°00'E.	28°C
Little Shearwater <i>Puffinus assimilis</i>	J. A. F. Jenkins	10. 8.63	33°25'S. 175°45'E.	15°C
Persian Shearwater <i>Puffinus (Ph.) persicus</i>	P. P. O. Harrison	30. 4.63	17°02'N. 55°24'E.	26°C
Wilson's Storm-petrel <i>Oceanites oceanicus</i>	N. G. Cheshire	23.10.62	00°49'S. 53°50'E.	29°C
Least Storm-petrel <i>Halocyptena microsoma</i>	W. A. Kennedy	21. 5.63	24°28'N. 112°15'W.	18°C
Least Storm-petrel <i>Halocyptena microsoma</i>	W. A. Kennedy	23. 5.63	16°35'N. 100°15'W.	32°C
Leach's Storm-petrel <i>Oceanodroma leucorhoa</i>	J. G. Worgan	9.10.63	34°38'N. 42°52'W.	25°C
Leach's Storm-petrel <i>Oceanodroma leucorhoa</i>	J. H. Agnew	7.11.61	33°06'N. 27°58'W.	22°C
Leach's Storm-petrel <i>Oceanodroma leucorhoa</i>	W. A. Kennedy	25. 9.63	40°20'N. 35°40'W.	24°C
Leach's Storm-petrel <i>Oceanodroma leucorhoa</i>	W. A. Kennedy	21. 5.63	24°28'N. 112°15'W.	18°C
(Galapagos Storm-petrel <i>Oceanodroma tethys?</i>)	J. G. Worgan	12. 8.63	08°00'N. 79°40'W.	28°C
Galapagos Storm-petrel <i>Oceanodroma tethys</i>	W. A. Kennedy	21. 5.63	27°10'N. 114°40'W.	17°C
Common Diving Petrel <i>Pelecanoides urinatrix</i>	J. A. F. Jenkins	15. 5.63	32°50'S. 175°35'E.	19°C
Red-billed Tropic-bird <i>Phaethon aethereus</i>	P. P. O. Harrison	30. 4.63	17°02'N. 55°24'E.	26°C

Twelve

(Red-tailed Tropic-bird <i>Phaethon rubricauda?</i>)	J. A. F. Jenkins	27. 5.63	Vavau, Tonga
White-tailed Tropic-bird <i>Phaethon lepturus</i>	J. A. F. Jenkins	5. 2.63	17°52'S. 178°59'E. 29°C
Red-necked Phalarope <i>Lobipes lobatus</i>	J. G. Worgan	19. 8.63	18°10'N. 104°09'W. 29°C
Red-necked Phalarope <i>Lobipes lobatus</i>	J. G. Worgan	5.10.63	19°02'N. 64°29'W. 30°C
Lesser Crested Tern <i>Thalasseus bengalensis</i>	E. G. May	3.10.62	Off Aden
Common Noddy <i>Anous stolidus</i>	R. O. Morris	29. 7.63	00°13'N. 169°31'E. 30°C
Lesser Noddy <i>Anous tenuirostris</i>	D. Pochin	13. 6.63	04°00'S. 65°10'E.
(Large shearwater or young gull?)	P. P. O. Harrison	25.11.63	21°45'N. 37°54'E. 21°C

Progress during the four years in which we have been preparing systematic reports may be summarised as follows:—

Year	Observers	Voyages	Reports	Censuses	Birds examined	Total forms
1960	21	50	514	—	—	514
1961	21	70	419	—	7	426
1962	22	80	268	42	9	319
1963	24	113	274	75	23	372

This represents a slow increase in the number of observers, a faster increase in the amount of information obtained, and some progress towards restricting the amount of paper to digest in the task of analysis, though the reduction started by the introduction of census forms two years ago is now reversed by the increase in the volume of material handled. The last thing we wish to see is a reduction in the useful work done by members; but we would like to direct attention again to the scale on which we now have to analyse results, and urge them to keep their records as short and clear as possible, preferably by using census forms, with full details of outstanding records on the back. I must emphasise again that we do require a few details to establish the reliability of all new, difficult, or unusual observations.

NOTES ON SPECIES

Penguins: Family *Spheniscidae*

We have few records, none of importance, but they figure very prominently in the literature, since they are large, easily studied, and form one of the few natural objects of interest to the staffs of antarctic research stations. The best summary is found in the "New Dictionary of

Birds" (ed. A. Landsborough Thomson, London, 1964). J. Prevost has also recently produced a book on the "Ecologie du Manchot Empereur" (Paris, Hermann, 1961). G. M. Budd has two studies on the Emperor Penguin *Aptenodytes forsteri* (Emu 61:171-189, Proc. Zool. Soc. London 139:265-288) which contrast interestingly with the account of the closely related King Penguin *Aptenodytes patagonica* by B. Stonehouse (Falkland Is. Depend. Sci. Rep. No. 23); whereas the first incubates its egg starving on the antarctic ice in the southern winter, the second tries to rear its young further north in the summer, but its breeding period takes over a year and gets progressively later so that every third young bird starves to death in the winter and even the most successful birds only rear two chicks in three years (a story which much needs confirmation elsewhere).

The Emperor's neighbour the Adelie Penguin *Pygoscelis adeliae* has also been studied by a number of people (G. Caughley, Rec. Dominion Mus., Wellington 3:263-282; H. J. Harrington, Notornis 9:33-39; B. Reid, Notornis 10: 98-111; B. Stonehouse, Proc. XIII Int. Orn. Congr. 766-779; R. H. Taylor, Ibis 104: 176-204), and the Rock-hopper *Eudyptes crestatus* by two, O.S. Pettingill (Wilson Bull. 72:213-227) and J. Warham (Auk 80:229-256); young birds leave the nest and gather in "crèches" while still small, where they are fed by their parents and accompanied by older non-breeding birds. The Little or Blue Penguin *Eudyptula minor* life cycle has been studied in New Zealand by F. C. Kinsky (Rec. Dominion Mus. 3:145-218), and that of the Jackass or Cape Penguin *Spheniscus demersus*, which plays an important part of the South African guano industry, has been studied in this context by R. W. Rand (Rep. Div. Fisheries S. Africa No. 41). A second record of the breeding of the most northerly species, the equatorial Galapagos Penguin *Spheniscus mendiculus* is given by A. M. Bailey (Condor 64: 159-160), K. H. Voous reports a first record of the Royal Penguin *Eudyptes schlegeli* for Marion Id. (Ardea 51:251), and B. J. Marples gives an account of the evolution of the group, comparatively well known from numerous interesting fossils, in the "Evolution of Living Organisms" (ed. G. W. Leeper, Victoria).

Albatrosses: Family *Diomedidae*

These are both tame and conspicuous not only at the nest but also at sea, and in consequence not only is there a fair amount of research at the breeding sites, but we get a good many records as well. Some of them still cause trouble over identification, and here it seems timely to call attention to an important back paper "A guide to the larger oceanic birds (Albatrosses and Giant Petrels) of New Zealand waters" by J. Moreland (Tuatara 6:99-107) as well as the note on the identification of the Wandering and Royal Albatrosses by K. Westerskov (Notornis 9:1-10). Among other general work are popular articles on their flight by W. Jameson (Nat. Hist. New York 69:62-69) and southern species by J. Warham (Animal Kingdom 65:70-77), comparative studies of the biology of southern mollymauks at South Georgia by W. L. N. Tickell, and of the North Pacific species by the Frings and Rice and Kenyon, quoted later under Black-browed and Black-footed Albatrosses. L. Miller has also added a second, larger species from the Miocene of California to the growing fossil record of the group in the north, where it must once have been much commoner and more widespread than it is now (Condor 61:471-472).

Wandering Albatross *Diomedea exulans*. We have a number of records from all sectors of the Southern Ocean south of 25°S., with immatures north to 12°S. 00°E. off SW Africa on 26 September, 1962 (W.E.W.), and birds reported as this which might also have been Waved Albatrosses *D. irrorata* off the Galapagos at 2°N. 95°W. on 4 January, 1963 and at ½°S. 100°W. next day (N.M.). Rather few people note details of the plumage; more records of the distribution of the birds at different ages are needed.

A preliminary note on investigations at the breeding stations in South Georgia by W. L. N. Tickell (Nature 185: 116-117) shows that the large young are in fact fed occasionally throughout the winter by their parents, and are not abandoned then as previously reported; from which it follows that old birds can only breed successfully every two years. There are now a number of ringing recoveries between South Georgia and the wintering ground off eastern Australia, where large numbers of birds are caught by the New South Wales Albatross Study Group, whose results are reported by J. D. Gibson and A. R. Sefton (Emu 59: 73-82, 60: 125-130). Among other things, 106 birds weighed between 13-25 lbs., with an average of 18 lbs., and had a wingspan ranging between 8' 11"-10' 7" with an average of 9' 10". They are also studying the rate of assumption of the adult plumage. A later summary of results by M. D. Murray (Australian Nat. Hist. 14: 75-78) gives details of the small colony on Macquarie Id. and reports that by 1962 they were recovering 7½% of the birds in later years and had twelve recoveries from South Georgia and one from Marion Id.

Royal Albatross *Diomedea epomophora*=*D. regia*. We still lack records, though in one of a series of papers K. Westerskov shows that it should be possible to tell it from old male Wandering Albatrosses by the dark lower border to the upper mandible and its habit of bending the wing-tip back when soaring, and in fact J. D. Gibson and A. R. Sefton have now found it among Wanderers wintering off New South Wales (Emu 62: 167-168). Among other things Westerskov suggests *D. regia* is the correct name; that some 2,300 pairs bred in the main colony of the southern race on Campbell Id. in 1957-1958, with 75% breeding success and an estimated annual mortality of 9%, and that if one allows for half the population being non-breeders under eight years old, the total population of this form is about 19,000 birds (Notornis 9: 1-10; Wildl. Publ. New Zealand No. 61; Emu 61: 153-170; Proc. xiii Intern. Orn. Congr. 795-811).

Black-footed Albatross *Diomedea nigripes*. We have a number of records off California between 30°-34°N. in April, May, August and September, 1963 by W.A.K. and J.G.W., and the last saw them NW to 39°N. 141°W. on 29 August. We have no records of the other North Pacific Albatrosses this year, so the joint studies of this species and the Laysan Albatross *Diomedea immutabilis* in the Hawaiian Leeward Is. may be mentioned here. Once drastically reduced by feather hunters, after fifty years of protection the great colonies on Midway and Laysan have built up to such strength again that they have become a hazard to aircraft on these mid-Pacific staging-posts. The general situation is described by O. S. Pettingill and D. B. Marshall (Audubon Mag. 66: 154-165); before the authorities reluctantly resorted to killing birds to clear the runways they also financed important general studies by H. and M. Frings (Condor 61: 305-314, 63: 304-312) and D. W. Rice and K. W. Kenyon (Auk 79: 365-386, 517-567).

The birds originally bred on at least 19 islands (a colony of Blackfoots in the Marianas reported by C. Jouanin in Bull. Mus. Nat. Hist. Paris 31: 477-480 has also been widely overlooked), but now breed on only 11. It is thought that there are some 1,500,000 Laysan and 300,000 Black-footed Albatrosses in the world, about half breeding in the Hawaiian archipelago, as opposed to only eighteen pairs of the third North Pacific species, the Short-tailed Albatross *Diomedea albatrus* breeding to the west at Torishima in the Bonins in 1958-1959. The latter is now also starting to increase as well, however, and young birds have begun to appear off the North American coast again (B. Wyatt, Condor 65: 163).

All three species normally nest in the winter. They first appear on the nesting grounds aged two or more usually three years, and do not breed until they are aged seven or more. The Blackfoot arrives in mid October and the Laysan in early November, the females first, and they nest in that order about ten days apart in late November, the male incubating first. The incubation period is about two months, and the chick is guarded for two weeks after hatching; the Blackfoot fledges about mid June, the Laysan a month later. Apart from their difference in colour, the two species behave very similarly, with minor differences in such characters as the pitch of the voice and the tempo of the display, studied by the Frings with captive birds, which flourished when given salt water in the diet. The Blackfoot is also of course a relatively southerly, coastal species and the Laysan a northerly, marine one. Clearly they are most rewarding objects for study.

Black-browed Albatross *Diomedea melanophris*. We have the usual records in the Southern Ocean. W. L. N. Tickell has also made an important study of the diet of this species and the Grey-headed Albatross *Diomedea chrysostoma* where they breed together at South Georgia. Vomited stomach contents were very similar except that the Grey-headed Albatross took more lampreys; it is curious that there should be so little difference; perhaps the most important difference in these birds is that the first migrates north in winter and the second does not (in 'Biologie Antarctique' ed. R. Carrick, M. Holdgate and J. Prevost, Hermann, Paris, 1964, pp. 383-387).

Yellow-nosed Albatross *Diomedea chlororhynchos*. Among other records of Mollymauks, we have a number of this species off south-west Africa and western Australia, and R.O.M. reports one ten miles south of Little Barrier Id., eastern New Zealand, on 4 June, 1963. He mentions the white body, dark slate-grey upperwing, paler back, the white underwing with the dark edge broader in front, and the jet-black bill, which suggests an immature.

True Petrels: Family Procellariidae

Giant Petrel *Macronektes giganteus*. We receive curiously few records. The extremely wide distribution of especially young birds around southern subtropical coasts is shown by a startling number of ringing recoveries of birds ringed as chicks in the far south, reported by S. E. Ingram, W. L. N. Tickell, C. D. Scotland and others (Emu 59: 189-200; Ibis 103a: 260-266), though a detailed study of the breeding behaviour on Macquarie Island by John Warham suggests that old birds may stay nearer the breeding colony (Auk 79: 139-160). It seems possible that some of the records of Sooty Albatrosses *Phoebastria fusca* we receive may really be young Giant Petrels, though they should be easy to tell apart because the first has a soaring flight and dark bill and the second a

level flapping flight and pale bill. "Sooty Albatrosses" were reported at sea off SW Africa and western Australia, and Giant Petrels with the last and commonly off New Zealand.

Northern Fulmar *Fulmarus glacialis*. We have a vast mass of records from the North Atlantic. In January-April 1963 there were many from between 45°-55°N. and 12°-54°W., with the most southerly at 40°N. 48°W. by S.E.C. on 22 April. There are no summer records this year, but among back records P.W.P. saw vast numbers at 51°N. 18½°W. on 8 June, 1958, and A.F.G.W. and R.H. saw thousands feeding around travelers in the North Sea off our NE coast at 55½°N. 3°W. on 25 August, 1958. In August and September there were up to a hundred on passages round the north of Scotland and every day to the Hudson Strait, and in September and October they were seen between 52°-60°N. and 0°-54°W.

In spite of the species' known abundance on the Grand Banks at times, we most consistently had numbers reported at sea off the British Isles; in summer many of these must be non-breeders. There are also some right across the Atlantic at this time, as recently reported by W.H. and M. Drury (Brit. Birds 52: 377-378) in addition to various earlier authors. There are a number of other notes in the literature, mainly referring to the British Isles, though C. J. Pennyquik and D. Webbe give some for Spitsbergen (Brit. Birds 52: 321-332), P. Milon reports a new southernmost colony in the east Atlantic off Brittany (Oiseau 30: 283-294), and P. W. Sykes a southerly record in Virginia after a gale in the west Atlantic (Auk 81: 437). In Britain A. Anderson and E. Waters provide counts and notes on the winter departure for St. Kilda (Scot. Nat. 1962: 120-125, Scot. Birds 2: 459-467), and L.S.V. and U.M. Venables report an increasing population in Shetland (Brit. Birds 52:197), while G. M. Dunnet and A. Anderson and these two and R. M. Cormack report on some results of detailed studies at a colony on Eynehallow in Orkney; including a method of sexing by bill size; observations of a two-week exodus from the colony before laying followed by a high rate of egg-loss when the birds first change over for the male to take the first incubation shift afterwards; and calculations that the adult expectation of life is about 16 years (Bird Study 8: 119-126; Brit. Birds 56: 2-18). C. J. Pennyquik has also published a study of gliding flight in the species, showing how it steers with its feet (J. Exp. Biol. 37: 573-593).

Southern Fulmar *Fulmarus glacialisoides*. Unlike the Northern Fulmar this species keeps in high latitudes except in cool current areas, and our only note is of three seen by W.E.W. in 22°S. 8°E. on 24 September, 1962.

Cape Pigeon or Pintado Petrel *Daption capensis*. Among other records, W.E.W. saw the first birds travelling south off SW Africa at 27½°S. 13°E. and the last travelling north at 17°S. 4°E. on 14 August and 25 September, 1962, and J.B.M. the most northerly birds in the Tasman Sea at 31°S. 161°E. on 9 November, 1963.

Snow Petrel *Pagodroma nivea*. We have no notes, but there have been two interesting papers on this species. H. L. Loevenskiold reports its breeding on sheltered slopes of the mountains of Princess Maud Land, Antarctica, at altitudes of 1500-2000m. up to 300 km. from the sea. These birds incubate the eggs on the breast feathers and eject oil when handled, and over the years this has accumulated into large frozen masses around the nests (Ibis 102: 132-134). W. J. Maher provides a fuller description of the breeding cycle at Cape Hallett, reporting that this species moults in the middle of it, presumably to obtain the fullest possible advantage from the long southern summer days (Condor 64: 488-499).

Dove Prion *Pachyptila desolata*. We have no important notes on Prions, but W. L. N. Tickell has recently described the life history and geographical variation of the most southerly species, the Dove Prion, in detail (Falkland Is. Depend. Survey Sci. Rep. No. 33).

White-chinned Petrel *Procellaria aequinoctialis*. Off Western Australia J.H.A. saw six at 26°S. 104°E. on 8 December, 1962, two fighting over what appeared to be a White-faced Storm-petrel that later escaped on the water on 10 December, 1962, and the last two at 36°S. 121°E. next day. In the South Pacific R.O.M. saw the first when southbound at 33°S. 172°E. on 4 February, 1963, with many at 36°S. 175°E. on 12 February, 1962, and others all the afternoon when northbound at 33°S. 176½°E. on 5 June, 1963. He could see the white chins on some of them; he notes they tend to "tower" in flight more than the other dark petrels. An example of the dark-chinned New Zealand form of this bird described as a separate species under the name "Westland Petrel" *P. westlandica* was washed up south of Sydney on 2 January, 1956 (A. R. McGill, Emu 59: 111).

White-faced Shearwater *Puffinus leucomelas*. N. Yoshida has provided an account of breeding behaviour of this little known species on the islet of Kamurijima off Kyoto, Japan, in Tori 17: 107. It appears that there are some 128,000 nesting holes on this islet, many unusable, and in fact only 30,000-36,000 birds appear on any one night, arriving an hour after dusk and leaving an hour before dawn. About 12,000 eggs are laid in any one year, which suggests the usual proportion of at least a third unemployed birds. They arrive about late February, lay in mid to late June, hatch in mid August, feed the young nightly for some 70-100 days and then desert them, and the young fledge in late October to mid November after the adults have migrated, all birds leaving by late November.

R.O.M. saw 10-20 in the usual wintering area north of the East Indies at 6°N. 127°E. on 30 October, 1962, and again at 5°N. 136°E. on 4 November, 1962. N.G.C. reports two from the Indian Ocean, including a medium-large shearwater with light brown upperparts, darker wings, a whitish head and neck and white underparts flying away with a gliding flight at 8°N. 82½°E. in the SW Bay of Bengal on 5 October, 1962, and another at 6°N. 80¾°E. five miles off the coast of Ceylon between Gt. Basses Reef and Dundra Head on 13 October.

Cory's or the Mediterranean Shearwater *Puffinus diomedea*=*P. kuhlii*. We have many records, mostly of small numbers from areas where they are known to be common. There are none for the winter quarters off South Africa this year, but D.S. has many records for West Africa. He had 23 at 27½°N. 15½°W. on 31 August, 1962, ten nearby at 27°N. 15½°W. on 12 September, and in November a maximum of thousands at 10°N. 16°W. on the 19th. In January 1963 he had a maximum of 80 at 10°N. 16°W. on the 16th, in February 14 at 9½°N. 16°W. on the 8th, in March 400 at 7½°N. 13½°W. on the 8th and 56 at 34°N. 13½°W. on the 17th. In April he had "countless" numbers at 12°N. 17½°W. on the 6th and again at 9½°N. 17°W. on the 10th, and 300 at 29°N. 13½°W. on the 15th. This agrees with a sudden late southwards migration about November, a few birds lingering off West Africa in the winter, and a prolonged northwards migration starting about January with a peak in April when birds may stop to feed in the area.

In the Mediterranean P.P.O.H. saw the first three possible birds at 37°N. 5°E. on 14 February, 1963, and small numbers afterwards, including three off Port Said on 22 April. Nobody records numbers till

the autumn, when he had a maximum of 300 in the area between 37°N. 9°-11°E. on 24 August and 21 September, and the last here on 18 December. K.D.H.L. also reports numbers on Mediterranean-Atlantic crossings during the summer, mainly in the Straits of Gibraltar and around the Azores, with the most westerly at 40°-41°N. 54°-55°W. on 4 July and 21 August, 1963. We have no particularly northerly records this year that might shed light on the appearance of 200 birds off Cape Clear, SW Ireland on 14 July, reported by P. A. Wright, J. T. R. Sharrock and H. M. Dobinson (Brit. Birds 57: 200-202). There have also been accounts of breeding on the Salvages by C. H. C. Pickering, C. Jouanin and F. Roux (Oiseau 29: 1-3, Sci. et Nat. 61: 1-8) and the Azores by G. E. Mallet and L. J. Coghlan (Ibis 106: 123-125).

Wedge-tailed Shearwater *Puffinus pacificus*. We have a fair number of notes and birds-in-hand forms from both the Indian Ocean and Pacific. In the Indian Ocean A.Y.N. produces a back note of 23 seen with some 105 Jouanin's Petrels at 12½°N. 45½°E. on 1 October, 1960. N.G.C. also reports 40 at 25°N. 58°E. in the Gulf of Oman on 14 September, 1962, and notes that they were uniformly dark brown with dark bills and the tail longer than in Pale-footed Shearwaters; it is not clear that Jouanin's Petrel was excluded. He saw other dark petrels at 25°N. 59°E. on 20 September, 11°N. 64°E. on 20 October, two at 2°N. 55½°E. on 22 October and one at 1°S. 54°E. on 25 October. E.G.M. saw four at 9½°S. 101½°E. on 5 September, 1962, and J.B.M. reports large flocks at 4½°N. 82½°E. on 18 September, 1963, several at ½°S. 92°E. on 20 September, 100 at 3°S. 97°E. next day, and two at 6°S. 102°E. the day after, with one "off the south coast of New Guinea" on 3 October. E.G.M. has a bird-in-hand form for one aboard at 5¼°S. 99°E. on 6 September, 1962, and N.M. saw one at 14°S. 56°E. on 11 April, 1963 and had one aboard at 30½°S. 108½°E. on 31 March, 1963, mentioning pink feet.

In the Pacific area J.B.M. had several at 10°S. 151½°E. on 4 October, 1963, one at 17°S. 158°E. on 24 October, 1963, two at 27½°S. 154½°E. on 26 October, 1963 and off Sydney next day, several at 14½°S. 176°E. on 16 November, 1963 and one at 6°N. 153°W. on 9 December, 1963. R.O.M. had probable birds at 19½°S. 178°E. on 2 February, 1963, 25°S. 176½°E. next day and 30°S. 175½°E. the day after, three at 11°S. 177°W. on 30 March, 1963 and two at 33°S. 176½°E. on 5 June, 1963. J. A. F. Jenkins has a bird-in-hand form for one of three aboard at 20°02'S. 175°01'W. on 25 February, 1963, and notes another came aboard at 14°47'S. 170°35'W. two days later. Both are bird-in-hand forms give the bill colour as black, and the legs and feet as "pinkish flesh;" J.A.F.J. says the leg was lighter pink on the fore side, darker at the sides and back, with many red veins showing in the feet, which had the claws white and the outer edge of the foot darker. A.Y.N. tells me birds breeding near Sydney may have dark feet; we need more information on foot and bill colour.

Among recent literature, R. A. Falla confirms the report of a breeding colony of the white-breasted form at Sharks' Bay, Western Australia, by D. L. Serventy and reports another white-breasted bird washed up in New Zealand (Notornis 9: 278-279), and A. O. Gross and others describe the breeding behaviour on Hen Id. of the Australian Great Barrier Reef (Atoll Res. Bull. No. 99).

Grey-backed Shearwater *Puffinus bulleri*. R.O.M. reports many off the New Zealand breeding area at 36°S. 175°E. on 12 February, 1963. A. d'Ombrain and A. Gwynne have also recently reported the presence

of birds in the breeding season on islets off New South Wales (Emu 61: 274-276; it is a pity they do not state why these were not pale-phase *P. pacificus*), and at the opposite end of the range M. M. Slepsov reports it in Russian waters in the North Pacific (Ornitologia 3: 410-412).

Great Shearwater *Puffinus gravis*. We have a very large number of records from the winter range in the North Atlantic. We gave the most interesting account of arrival in the west in May 1963 by R.S.H. in "Sea Swallow" last year; the rest agree with the general pattern of movement recently plotted in detail by K. H. Voous and J. Wattel (Ardea 51: 143-157), with large numbers off the Newfoundland Banks early in the summer, in Greenland waters at midsummer, and further east on the return passage in early autumn.

Pale-footed Shearwater *Puffinus carneipes*. N.G.C. identified a number with varying degrees of certainty in the Indian Ocean. On 7 February, 1962, a rather unlikely date, he reports 160 in two flocks, one of 100 on the water, one of 60 flying east, in the Bay of Bengal at 17°N, 86°E. He saw six closely at 8°N, 75½°E, on 10 September, and 35 closely at 11°N, 70½°E next day, with more off south Arabia over the next month, and 180 off Cape Comorin at 7½°N, 78°E, on 4 October. P.P.O.H. also saw one closely in the Arabian Sea at 15°N, 69°E, rather late in the year, on 27 November, 1963; he mentions the pale bill. In the Pacific J.B.M. saw several at 31°S, 161°E, on 9 November, 1963, and R.O.M. many at 36°S, 175°E, on 12 February, 1963.

Pink-footed Shearwater *Puffinus (carneipes) creatopus*. In the west Pacific J.G.W. reports two of this regional representative of the last species at 10½°N, 91½°W, on 15 August, 1963, and a possible bird off California at 31°N, 117½°W, on 22 August; the first record supports Captain Mörzer Bruyns observation later in this 'Sea Swallow' that these and other shearwaters migrate over the open east Pacific between California and Chile rather than following the coast.

Sooty Shearwater *Puffinus griseus*. There have recently been a number of important contributions to the literature on this species. L. E. Richdale has produced a consolidated account of seventeen years' observation of its breeding biology on Whero Id. off southern New Zealand (Proc. Zool. Soc. London 141: 1-117). There is a large non-breeding population, perhaps of the order of two-thirds of the birds, at this colony early in the season. The breeding birds incubate in alternate spells of a week to a fortnight, and once the chicks hatch they are then fed on about one night in three and are finally deserted when well grown if they do not fledge first. They then do not return to the colony or start breeding until four to seven years old. The survival rate of nestlings varies from year to year, presumably with the food-supply, but the adult mortality is low, about 6% annually. The occurrence of a wreck of young birds in New Zealand after fledging in a bad year, 1960-1961, is also documented by B. Stonehouse (Notornis 13: 46-48).

Dr. Richdale provides important evidence about movements in the Southern hemisphere, where his figures suggest that the species occurs off South Africa mainly at the seasons of migration among other things. The movements at sea are documented more fully by J. H. Phillips and J. Warham, who plot observations and ringing recoveries to demonstrate a clockwise migration around the northern oceans with the prevailing winds (Ibis 105: 340-353, 106: 390-391). We have few records that enlarge on this summary this year, except that D.S. gives several records for West Africa, including five over fish shoals at 15°N, 17½°W, on 6 November.

1962, one at 19°N, 17½°W, on 13 November, and four at 12°N, 17½°W, on 6 April, 1963, and Captain Mörzer Bruyns and Mr. Jones give important records for the return migration in the east Pacific later in this 'Sea Swallow.' Since E. I. S. Rees has questioned Phillips' statement that the birds do not go far north in the Atlantic (Ibis 106: 118-119), perhaps I should place on record that when I made a survey of the movements of this species in 'Sea Swallow' in 1956 I checked this with Dr. Salomonsen, who reports it rare in Greenland waters.

Short-tailed Shearwater *Puffinus tenuirostris*. The life history of this close relative of the last species is outlined by D. L. Serventy in vol. 1 of the "Handbook of North American Birds" (ed. R. L. Palmer, Yale and London). A fuller account of a southern breeding colony in the Bass Strait is given by John Warham, and there have also been a number of recent reports of the discovery of colonies of this and other shearwaters to the north on islands off New South Wales (Emu 60: 65-66, 75-87, 147-154; 62: 181-182). D. S. Farner and D. L. Serventy have also investigated the body temperature at the breeding site (Condor 61: 427-433), and Serventy reports that the birds have laid very regularly on 25-26 November for at least 120 years (Proc. XIII Int. Orn. Congr. 338-343); R. Mykutowycz reports young birds dying of an accumulation of uric acid in the bowel, and Serventy gives a summary of ringing returns, including an increasing number from the North Pacific (C.S.I.R.O. Wildlife Reports 6: 42-55, 7: 67-79).

J.B.M. adds some additional records to those given by Captain Mörzer Bruyns later in 'Sea Swallow' to fill the gap in observations of the remarkable figure-of-eight migration of this species around the Pacific. He reports that in 1963 he moved through the area south of Captain Mörzer Bruyns' records a week later in the year, and on 16 November noticed flocks of smallish, short-winged, all dark petrels with light greyish undersurfaces at 14½°S, 176°E. They appeared again at 10°S, 175°E, and 4½°S, 174°E, on the next two days, when he noticed the stiff-winged, flapping flight with a "rapid wingbeat similar in pulsation to a teal or snipe and not gliding much at all," and saw the last ones at 1°N, 173°W, as he approached Tarawa in the Gilberts on 19 November. R.O.M. also tells me he saw this migration passing SSW across the west end of Bligh Water in the Fiji group as early as the end of September in this year, which is more reasonable for birds which lay in November; those still passing south in November must be non-breeders.

Christmas Shearwater *Puffinus nativitatis*. J.B.M. reports two at 6°N, 131°W, on 13 December, 1963. Temperature regulation of this and other petrels at Laysan is discussed by T. R. Howell and G. A. Bartholomew (Auk 78: 343).

Manx, Levantine, Balearic, Black-vented and Fluttering Shearwaters *Puffinus p. puffinus*, *P.(p.) yelkouan*, *P.(p.) mauretanicus*, *P.(p.) opisthomelas* and *P.(p.) gavia*. We have records of shearwaters of this group, which may or may not be regarded as one species, from the vicinity of many known breeding places, including Britain, Ushant, the Azores, the Balearics, lower California, and Little Barrier Id., New Zealand. Among interesting records in the Mediterranean, where it was seen throughout the year, P.P.O.H. had twelve at 35°N, 36°E, off Syria on 28 August, 1963, one at 33°N, 27½°E, off Egypt on 8 October, one at 33°N, 33°W, off Israel, one off North Africa at 37°N, 8½°E, on 11 January and six there at 36°N, 4°W, on 26 March, and a thousand in the great gathering ground for the

species, the Straits of Gibraltar, on 11 September. In the North Atlantic D.S. had the first possible one at 44°N. 8°W. off Spain on 7 February, K.D.A.L. had two well out in the Atlantic at 48°N. 33°W. on 9 April, and S.E.C. had one here at 54°N. 31½°W. on 19 September. In the autumn D.S. saw ten at 30°N. 14½°W. off the Canaries on 14 September, 1962 and two in the Channel at 49°N. 2°W. on 7 November, and P.P.O.H. saw the last twelve at 37°N. 9°W. off Cape St. Vincent on 21 December, 1963; he describes them as black above, which suggests the typical form. In the Pacific W.A.K. reports that Black-vented Shearwaters were numerous off Mexico at 21½°N. 108°W. on 11 September, 1963 and at 15°N. 97°W. two days later, and R.O.M. reports rafts of up to twenty Fluttering Shearwaters off Little Barrier Id., New Zealand, on 4 June, 1963. P.Post has recently summarised records from New England, where they are apparently not unusual in early summer (Kingbird 14: 133-140).

Little or Dusky and Audubon's Shearwaters *P. assimilis* and *P. (a.) lherminieri*. This year D.S. provides a number of records of birds of this group (which also may or may not be regarded as one species) off West Africa. He saw five possible birds at 14°N. 17½°W. on 17 January, 1963, another at the same place on 7 February, eight nearby at 14½°N. 17½°W. on 12 March, one at 26½°N. 15°W. on 15 March and another at 31½°N. 14°W. on 2 April, three at 12°N. 17½°W. on 6 April, two at 9½°N. 16°W. on 10 April, and ten at 28½°N. 13½°W. on 15 April. He also saw one at 19°N. 17½°W. on 13 November, 1962; the first and last of these with water temperatures at 21°C. It is not clear where the more southerly of these birds could have come from, but the most likely place seems the Cape Verde Is.; the northern ones presumably came from the Canaries. In the western Atlantic J.G.W. also saw eleven off the Antilles at 19°N. 64°W. on 7 August, 1963, and three were seen from "Britannia" at 17°N. 77°W. on 28 December, 1962.

In the Indian Ocean W.E.W. found "Persian Shearwaters" numerous in the Straits of Bab el Mandeb and off Perim Id. on 1 February, 1963, and P.P.O.H. had one on board off the Kuria Muria Is. on 30 April, 1963. Among numerous other records off southern Arabia, N.G.C. also reports 800 at 27°N. 53°E. on 19 November, 1962. A possible bird was seen from "Britannia" at 11°S. 55½°E. off the Seychelles on 11 April, 1963. In the Pacific J.B.M. reports a number in the little-known area of upwelling north of the East Indies, presumably from the strong colonies in the Palau group. He saw the first at 6½°N. 136½°E. on 12 December, 1963, and several at 6°N. 131°W., dozens at 6½°N. 126°E. and possible ones at 6½°N. 121°E. on the next three days.

J. A. F. Jenkins had a Little Shearwater aboard off northern New Zealand on 10 August, 1963. It was described as sooty black above with a black bill and the outer toe and half way up the outside of the tarsus black, the rest of the legs and feet slate blue, the webs blue-grey with red veins. Its overall length was 308 mm., its wingspan 615 mm., and its bill 29 mm. The Persian Shearwater was sooty brown above with a blackish-brown bill and the pale parts of the legs and feet pink, with pinker veins on the webs. Its overall length was 310 mm., its wingspan 680 mm., its bill 31 mm. and its weight 250 gm.; it had unidentified parasites.

Great-winged Petrel *Pterodroma macroptera*. Sailing round S.W. Australia A.Y.N. first saw them at 23½°S. 106½°E. on 21 August, 1960, and commonly across the Great Australian Bight. R.O.M. saw numbers off Little Barrier Id., New Zealand, on 4 June, 1963, and two at 33°S. 176½°E. next day. J.B.M. saw six at 31°S. 161°E. on 9 November, 1963.

and found birds resembling this species numerous at 24°S. 170°E. two days later.

White-headed Petrel *Pterodroma lessonii*. J.H.A. had one in the Great Australian Bight at 38½°S. 141°E. on 14 December, 1962.

Schlegel's Petrel *Pterodroma incerta*. W.E.W. reports a number of birds sailing south to the Cape, the first at 19°S. 6°E. on 12 August, 1962, with many at 23°S. 9½°E. next day, two at 27½°S. 7½°E. on 14 August, one at 25°S. 10½°E. on 23 September, a large flock on the water at 22°S. 8°E. on 24 September, two at 17°S. 4°E. on 25 September and the last three at 12°S. 00°E. on 26 September. In his back notes G.B. likewise reports birds which may be this species common during the afternoon of 6 August, 1958 at 24°S. 9°E., usually singly, though once in a party of 15. It is curious how these birds seem to concentrate in a limited area.

Tahiti Petrel *Pterodroma rostrata*. A.Y.N. saw several while cruising in the vicinity of the New Hebrides. On 7 July, 1963 he saw one at 20°S. 176°E., on 24 July four between Uca and Lifu in the Loyalty Is., on 28 July two in the Bulari passage near Amadee Id. in the New Caledonia barrier reef, and during 7 September four between 21¼°S. 153°E. and 19½°S. 153°E. in the SW Coral Sea. Later J.B.M. also petrels which he thought might be this species in much the same area, one at 16¾°S. 158°E. on 24 October, 1963, and two next day at 22°S. 156¼°E.

J.B.M. reports they were large with the lower abdomen light or white; A.Y.N., who saw them at distances down to 30 yards, describes them in detail. They were petrels about 14ins long, of medium build with relatively long, narrow wings, a wedge-shaped tail and a head like a Great-winged Petrel with a short, stubby bill. In colour they showed a most striking combination of black and white, made more noticeable by the sharp divisions between the two across the breast and on the flanks. The upperparts, head, neck, upper breast and undersides of the wing were very dark, the chin, throat, flanks and undersides of the tail slightly paler, the lower breast, belly and vent white, the bill dark. With wind force 3 and above the flight was swooping and low soaring; in calm weather it was quite leisurely and languid with alternating sequences of flaps and glides.

The birds' behaviour at sea does not appear to have been described before; apparently it breeds fairly commonly in the New Hebrides, and there is a large chick in the British Museum, taken by E. L. Layard at Woodin Pass, New Caledonia, on 3 November, 1877. The later records here are important as they show that they disperse west almost to the Australian barrier reef; the first of 9 September were 25 miles E. of Swain Reef, the last 42 miles SE of Marion Reef.

Trinidad or Herald Petrel *Pterodroma arminjoniana heraldica*. J.B.M. originally identified the first Tahiti Petrel as a Herald Petrel, which should also occur in this region, as it was first described from the Chesterfield Is. in the central Coral Sea, and J. Warham has since found a bird frequenting an island of the Australian barrier reef (Emu 59: 153-158, with good photographs). It should not be confused with the last species, at it is smaller, paler above, and even when white below shows more mottling on the breast and some white on the underwing, while many are partly or entirely dark below.

Phoenix Petrel *Pterodroma alba*. J.B.M. reports several petrels at 6½°N. 136½°W. on 12 December, 1963 which stayed in the middle distance. He notes they were dark above and under the wing but white below. He thought they might be either Herald Petrels or the pale phase of the Wedge-tailed Shearwater, but both these should show at least some white

under the wing in the pale phase, and the combination of dark upperparts and underwings with white bellies in this region indicates the Phoenix Petrel, very common hereabouts. They might be confused with Tahiti Petrels, but they are smaller with a more slender bill, and browner above, with a trace of a white chin at close quarters and more white on the breast.

Soft-plumaged Petrel *Pterodroma mollis*. D.S. reports one in the North Atlantic at 12°N. 17½°W. on 6 April, 1963. It was the size of a Manx Shearwater, dark above with a dark underwing, and white below. Presumably it came from the Cape Verde Islands, where they are still common; little else that occurs in this region has a dark underwing.

Peale's or the Mottled Petrel *Pterodroma inexpectata*. L. E. Richdale has recently published some stray notes on this and other species on Whero Id., southern New Zealand, remarking among other things on the extraordinary size of the eggs of small petrels, a quarter to a sixth of the weight of the parent (Ibis 106: 110-114).

The Capped, Bermuda, Hawaiian, White-necked and Barau's Petrels *Pterodroma hasitata*, *P. (h.) cahow*, *P. (h.) phaeopygia*, *P. (h.) cervicalis*, and *P. (h.) barau*. The oft-repeated obituary of the Capped Petrel or Diablotin of the Antilles proves very premature, since D. B. Wingate, already warden of the rare allied Bermuda Petrel (see his account of it in vol. 1 of the "Handbook of North American Birds"), has now found large numbers of Capped Petrels breeding in the forested inland cliffs of Hispaniola as well. Apparently the nests are extremely inaccessible, even to the mongoose which has wiped the birds out elsewhere, but the inhabitants trap them by lighting fires to attract them on the peaks above the nests on cloudy nights. M. Armand Barau has also recently discovered a new member of this very widespread group breeding undetected in the equally inaccessible inland cliffs of Réunion in the Indian Ocean; it is very like the Bermuda Petrel, grey above with a darker cap and wing coverts and a white face, underparts and underwing, but it has a shorter tail (Auk 81: 147-159; C. Jouanin, Bull. Mus. Nat. Hist. Paris 35: 593-597).

Our only notes of this group of petrels come from the main area of dispersal in the Pacific. J.G.W. reports a number of dark-backed Hawaiian Petrels without details. He saw the first two at 10½°N. 91½°W. on 15 August, 1963, twenty at 13°N. 96°W. next day, five at 18°N. 104°W. on 18 August, one at 24°N. 112°W. on 20 August, four at 38°N. 135°W. on 27 August, 150 going SSW at 12°N. 108°W. on 23 September, 200 going WSW at 10°N. 103°W. next day, and four at 8½°N. 98°W. on 25 September. J. B. M. also saw three at 7°N. 104°W. on 18 December. R.O.M. also reports the grey-backed White-necked Petrel. He saw two at 30°S. 175½°E. on 4 February, 1963, one at 23½°S. 179°E. on 7 June, one at 21°S. 178½°E. and two at 14½°S. 175°E. on the next two days, and two at 11½°S. 173½°E. on 7 July. He describes these birds as dark above with a conspicuous white collar across the hind neck, and white below with a dark leading edge to the underwing, rather like Gould's Petrel with a white collar. Although only recorded around the Kermadec Is. in the past, there is recent record even further to the north, since N.h.Kuroda reports one was collected in full moult in Japan on 29 July, 1962 (Misc. Rep. Yamashina's Inst. Orn. Zool. 3: 222-226). We give another record from this region by Mr. Jones later in 'Sea Swallow'.

The Bonin and Black-winged Petrels *Pterodroma hypoleuca* and *P. (h.) nigripennis*. These, usually now classified together, also may or may not be regarded as one species. We have no records of the first this year, but Kuroda gives one from Japan with the record of a White-necked

Petrel cited above. K.H.Voous also reports a specimen of the second from $38\frac{1}{2}^{\circ}\text{S}$. 177°W . off New Zealand on 9 March 1962 (Ardea 51: 73), extremely near the place and date where we reported numbers last year; welcome confirmation of one members' records! This year R.O.M. reports the first possible birds (perhaps mixed up with White-necked Petrels, as he mentions a collar) at 30°S . $175\frac{1}{2}^{\circ}\text{E}$. on 4 February, 1963. He saw single ones at $23\frac{1}{2}^{\circ}\text{S}$. 179°E . on 7 June and $20\frac{1}{2}^{\circ}\text{S}$. $178\frac{1}{2}^{\circ}\text{E}$. next day, and at $14\frac{1}{2}^{\circ}\text{S}$. 175°E . on 6 July. The first were described as lightish grey with dark primaries, white below, and smaller than White-necked Petrels; the last was not seen clearly above but had the distinctive underwing, white with a dark bar along the leading edge.

"Cookilaria" (Cook's, Stejneger's, and Gould's) Petrels *Pterodroma cookii*, *P. longirostris* and *P. leucoptera*. As usual, we have a number of records of this common and widespread Pacific group which are hard to tell apart, though this year from the localities they sound like the tropical species, Gould's. R.O.M. records three at $19\frac{1}{2}^{\circ}\text{S}$. 178°E . on 2 February, 1963, more all next day at 25°S . $176\frac{1}{2}^{\circ}\text{E}$., and some five with Black-winged and White-necked Petrels at 30°S . $175\frac{1}{2}^{\circ}\text{E}$. the day after, one at $23\frac{1}{2}^{\circ}\text{S}$. 179°E . on 7 June, and about ten, some flying out from Kandavu Id. towards sunset, at 20°S . 178°E . on 8 June. J.B.M. saw one at $6\frac{1}{4}^{\circ}\text{N}$. $131\frac{1}{4}^{\circ}\text{W}$. on 13 June, and two at $6\frac{1}{2}^{\circ}\text{N}$. $128\frac{1}{4}^{\circ}\text{W}$., possibly some in a flock of mixed petrels at $6\frac{3}{4}^{\circ}\text{N}$. 121°W ., and others at 7°N . 110°W . on the next three days, with the last, identified as "Cooks Petrel", at 7°N . $88\frac{1}{2}^{\circ}\text{W}$. on 21 June. R.O.M. mentions a grey back and wings, a darker cap, tail, and W across back and wing, white underparts and a white underwing which agrees with Gould's Petrel. He also saw some which were darker above with more markings on the upper breast and underwing off Kandavu Id., presumably examples of the melanistic Fiji population sometimes known as the "Collared Petrel" *P.l. brevipes*.

Bulwer's Petrel *Bulweria bulwerii*. In the Atlantic K.D.A.L. saw several at 39°N . 15°W . on 19 July, 1963, which he describes as smaller than a Sooty Shearwater with pink feet, and larger than any storm-petrel with more tapering wings and a longer tail. D.S. also saw two at $27\frac{1}{2}^{\circ}\text{N}$. $15\frac{1}{2}^{\circ}\text{W}$. on 31 August, 1963 and one at 30°N . $14\frac{1}{2}^{\circ}\text{W}$. on 14 September, 1963, and R. French extends the known wintering area west with a report of a body on Soldado Rock off Trinidad on 23 January, 1961 (Auk 80: 379). In the Pacific J.B.M. saw a possible bird against the light, north of the Line Group at 6°N . 147°W ., on 10 December, 1963, perhaps a wintering area for Hawaiian birds. W.W.A. Phillips has recently reported the first record from the Indian Ocean, from the Maldives in summer, in Bull. Brit. Orn. Cl. 79: 100-101.

Jouanin's Petrel *Bulweria fallax*. There are many records of dark petrels in the Arabian Sea, a good many of which must refer to this species. Among large numbers reported, P.P.O.H. had a number with shearwaters, phalaropes, porpoises, whales and flying fish at 15°N . 52°E . on 29 April, 1963, perhaps 150 off the Kuria Muria Is. at $17\frac{1}{2}^{\circ}\text{N}$. 56°E . next day, 200 at 15°N . $51\frac{1}{2}^{\circ}\text{E}$. on 15 October, 1963 and 100 at 18°N . $57\frac{1}{2}^{\circ}\text{E}$. next day.

Storm-petrels: Family *Hydrobatidae*.

We have a large number of records of members of this family, including the usual host of reports of the small, dark, white-rumped forms, identified with varying degrees of accuracy as a number of different species. It is impossible to quote them all in detail, so they will be summarised very broadly; we are holding the records to be plotted in detail at some time in the future.

Twenty-five

Wilson's Storm-petrel *Oceanites oceanicus*. The records of white-rumped storm-petrels likely to involve this species include birds starting to move north off West Africa from 10 March with 140 at 12°N. 17½°W. on 6 April, 1963 (D.S.); numerous records north to about 45°N. in the Atlantic and the central Red Sea in the Indian Ocean from mid April to mid October; the usual accumulation of small flocks in the eastern North Atlantic and larger ones off Arabia and Ceylon at the end of the season, the most 350 at 25°N. 59°E. on 14 September and 100 at 7½°N. 78°E. on 4 October (N.G.C.); and the last two off West Africa on 19 November (D.S.). There are also more doubtful records of this species or Elliot's Storm-petrel *O. gracilis* in the Galapagos area in January and August; the two species are apparently hard to tell apart because the white belly of the second is difficult to see at sea. Wilson's Storm-petrel has in fact recently been recorded north to the Farallon Is., California in this area (I.C.T. Nisbet and R.G. McCaskie, Condor 62: 141); it is not clear how far north it normally goes in the Pacific. We have one bird-in-hand form from the central Indian Ocean in October, 1962 from N.G. Cheshire; he mentions pale edges to the three inner secondaries, which suggests a young bird; the overall length was 156 mm., the wing 145 mm., the wingspan 350 mm.

White-bellied Storm-petrel *Fregetta grallaria*. A.Y.N. provides a report of one seen at 9°N. 68°E. on 6 October, 1960 to reinforce the first record for the Indian Ocean at 10½°N. 63½°E. on 18 July, 1958, given by M. E. Jones in "Sea-Swallow" last year. He reports it was first seen under the port bow and stayed close to the port beam for at least two minutes. It was like Wilson's Petrel in shape, and about 7½ ins. long. The upper head, wings and tail were black, the mantle grey-black, the rump white, with a suggestion of a pale bar on the wing-coverts. The chin, throat and upper breast were black, the lower breast, belly, flanks, wing-linings and vent white, the under-tail-coverts mid-grey, the bill, legs and feet black. The flight was fairly fast and appeared more laboured than with Wilson's Petrel, with some bounding and shearwatering. The feet trailed beyond the tip of the tail. J.B.M. also reports several from 27½°S. 154½°E. in the Tasman Sea on 26 October, 1963, remarking that there may be more but that they are very well camouflaged against the sea; J.G.W. also reported a possible bird near the Galapagos at 9¼°N. 98°W. on 25 September.

White-faced Storm-petrel *Pelagodroma marina*. Off West Africa D.S. reported one at 33½°N. 13°W. with a water temperature of 20°C. on 26 September, 1962, possible distant birds at 28½°N. 15°W. and 14°N. 17½°W. on 9 and 17 January, 1963, one at 29½°N. 15°W. on 16 March and three at 34°N. 13½°W. next day, and one at 25°N. 15½°W. on 14 April. R.O.M. reports one at 28½°S. 178°E. near the Kermadec Is. in the Pacific on 6 June, 1963, remarking that the wings and tail seemed very broad, and the flight involved a distinctive glide-and-bounce. M. E. Gillham and J. A. Thomson describe how a famous colony in Port Phillip Bay, SE Australia, has been devastated by man and grazing animals, and the birds have founded another colony nearby (Proc. Roy. Soc. Victoria N.S. 73: 37-46). Gillham later describes breeding behaviour in this area (Proc. Roy. Soc. Tasmania 97: 33-41), and W. F. J. Mörzner Bruyns and K. H. Voous have also published a number of records of this race wintering in the Indian Ocean (Ardea 52: 223-224).

British Storm-petrel *Hydrobates pelagicus*. Reports of this species include a hundred seen in the wake at 52½°N. 15°W. by S.E.C. on 17 September, 1962, with others off Britain between August and November,

on migration off Iberia in March and December, in winter quarters off West Africa between 19 November and 6 April, and possibly off South Africa in December. R. W. Arnold has recently described a colony in the Channel Is. (Rep. Soc. Guernaise 17: 291-292) and W. E. Waters the behaviour at St. Kilda (Brit. Birds 57: 309, Scot. Birds 3:73-81).

Galapagos Storm-petrel *Oceanodroma tethys*. A number of storm-petrels seen around the Galapagos and two that came on board to the north were probably this species. The bird reported by W.A.K. from 27°N. 115°W. in May had an overall length of 175 mm., a wingspan of 319 mm. and a tarsus of 22 mm.; the bird reported 32 miles off Panama at 8°N. 80°W. by J.G.W. in August had a "square fan-shaped tail, with a white flash on the upper tail coverts", and the overall length 145 mm., the wingspan 303 mm., and the tarsus 20 mm., which last excludes his suggestion of Elliot's Storm-petrel.

Madeiran Storm-petrel *Oceanodroma castro*. Among other possible records, mainly off West Africa and around the Galapagos, D.S. reports two at 17°N. 17½°W. on 5 April, 1963, and J.O.B. two more at 1°S. 8½°W. on 28 November, 1963. The breeding colony supplying this area on Boatwain Bird Islet off Ascension has recently been studied by R. G. Allen (Ibis 103b: 274-295), who estimates that some 3,000 birds were present, with gross overcrowding and many visiting each nest-burrow. Some breed throughout the year, but most arrive in July and breed in November, as on St. Helena to the south. The incubation period is about 38 days, the fledging period about 58 days, and it was thought that about 60% of the birds lay each year, 49% of the eggs hatch, and 67% of the chicks fledge, so only a fifth of the adults and a third of the eggs eventually produce young birds each year.

Leach's Storm-petrel *Oceanodroma leucorhoa*. A substantial number of the records of "white-rumped storm-petrels" must involve this species, both in the North Atlantic in summer, and in the tropical Atlantic and east Pacific in winter. In the north we have records from the area between 40°-55°N. and 26°-55°W., but most commonly in the west, from April to December. Off West Africa we have records from November to March. In the east Pacific among other records N.M. reported two at 5°N. 88°W. on 3 January, 1963, and single birds at 1½°N. 95½°W., ½°N. 100°W. and 2½°S. 119°W. over the next three days. Four bird-in-hand forms and one detailed description in the notes also refer to this species; the first will be found in the table earlier, the last was recorded by S.E.C. at 53°33'N. 36°48'W. on the evening of 29 October, 1962. Four refer to the typical race, and one to one of the dark-rumped Pacific forms; overall lengths were given as 195, 190, 180 and 175 mm., wingspans as 392 and 448 mm., the Pacific bird (reported as "*O. monorhis*," probably *O. l. chapmani*?) coming last in each case. Waters gives notes on breeding at St. Kilda with his accounts for the British Storm-petrel; C. H. Huntingdon reports that some southerly New England colonies have a poor breeding success as with the Madeiran Storm-petrel on Ascension, and speculates they can only be maintained by immigration of birds from more successful colonies elsewhere (Proc. XIII Int. Orn. Congr. 701-705).

Swinhoe's Storm-petrel *Oceanodroma monorhis*. This may or may not be regarded as a dark-rumped race of Leach's Petrel which breeds in Japan and winters around SE Asia. A.Y.N. gives some important back notes of birds seen in the Indian Ocean. Six were seen with a flock of 41 Wilson's Petrels at 7°N. 77°E. on 8 October, 1960; he describes them as the same length as the Wilson's Petrels, but slimmer, with a longish

forked tail. The wings were also finer, and the legs shortish. At long range the colour appeared black, but at close quarters in a good light mid sooty brown, with the under wing coverts greyish and an ill-defined pale bar on the upper coverts. The flight was bounding with some shear-watering, and some pattering once or twice. Single birds were seen again at $6\frac{1}{2}^{\circ}\text{N}$, 80°E ., 1°S , 86°E . and 10°S , 93°E . on 11, 13 and 16 October.

Ashy Storm-petrel *Oceanodroma homochroa*. J.G.W. identifies seven dark storm-petrels seen at 27°N , 115°W . with a water temperature of 22°C . on 21 August, 1963 as this species. They might be, but this is a bit south of the known range. A. Small reports that at sea they have a fluttering flight, and also show a pale mark under the wing (Condor 61: 373-374); R. I. Bowman has also recently provided some notes on the breeding station on the Farallon Is., California, where they had fresh eggs and the first chicks in mid June (Condor 63: 410-416). Very little seems to be known about this bird, which has not yet been recorded at any distance away from this breeding area.

Fork-tailed Storm-petrel *Oceanodroma furcata*. Notes on breeding of this and other seabirds including Leach's Petrel on another islet off the Washington coast to the north are given by F. Richardson in Condor 62: 140.

Black Storm-petrel *Oceanodroma melania*. J.G.W. saw a bird resembling this species at $10\frac{1}{2}^{\circ}\text{N}$, $91\frac{1}{2}^{\circ}\text{W}$. on 15 August, 1963.

Least Storm-petrel *Halocryptena microsoma*. W.A.K. gives two Bird-in-hand forms from 25°N , 112°W . and 16°N , 100°W . in May, and reports one bird had an overall length of 139 mm. and a wingspan of 319 mm. A. Small reports that at sea it has a distinctive swift flight, and that the best character is the short round or wedge-shaped tail (Condor 61: 373-374).

Diving-petrels: Family *Pelecanoididae*.

R.O.M. reports ten, presumably Common Diving Petrels *Pelecanoides urinatrix* at 36°S , 175°E . off northern New Zealand on 12 February, 1963, and J. A. F. Jenkins had one on board nearby at 33°S , $175\frac{1}{2}^{\circ}\text{E}$. on 15 May; the length was 200 mm., the wingspan 425 mm. These birds, which breed nearby, are often cast up on SE Australian beaches. J. D. Gibson and A. R. Sefton report the first Australian specimen of the Georgian Diving Petrel *Pelecanoides georgicus* on a beach south of Sydney in December, 1958, with one at Macquarie Id. at the same time (Emu 59: 267). Since these birds can only be told apart by detailed examination of the bill, and virtually nothing is known of their range at sea, this shows what a need there is for careful examination of such specimens.

Tropic-bird: Family *Phaethontidae*

We have many reports of the family, some from areas where there is little information for them.

Red-billed Tropic-bird *Phaethon aethereus*. Off West Africa D.S. saw one at $13\frac{1}{2}^{\circ}\text{N}$, $17\frac{1}{2}^{\circ}\text{W}$. on 11 April 1963. In the east Pacific J.G.W. had them at $10\frac{1}{2}^{\circ}\text{N}$, $91\frac{1}{2}^{\circ}\text{W}$. and 13°N , 96°W . on 15 and 16 August, 1963. In the Indian Ocean there are a number of records along the south coast of Arabia, and P.P.O.J.I. had one aboard off Masira Id. on 30 April, 1963; N.G.C. also reports one off Ceylon at 6°N , 81°E . on 9 September, 1962, and two in the Bay of Bengal at $16\frac{1}{2}^{\circ}\text{N}$, 86°E . on 11 October, 1962. B. Stonehouse reports that on Ascension some breed throughout the year, with a peak of activity in August 1958 which may or may not be regular.

and that individuals lay at intervals of 9–12 months according to their previous nesting success (Ibis 103b: 124–161).

Red-tailed Tropic-bird *Phaethon rubricauda*. In the Pacific N.M. reported one off Panama at $6\frac{1}{2}^{\circ}\text{N}$. 82°W . on 2 January, 1963, and J.B.M. had one aboard at 24°S . 170°E . on 11 November, while birds he saw at $44\frac{1}{2}^{\circ}\text{S}$. 174°E . and 1°N . 173°E . on 18 and 19 November, which R.O.M. saw at 5°N . 140°E . on 5 November, 1962, and which J. A. F. Jenkins found in his passengers' baggage at Vavau, Tonga, on 27 May, 1963 may have been this species. The last had lost its tail and was 361 mm. long without it, with a wingspan of 808 mm.

White-tailed or Yellow-billed Tropic-bird *Phaethon lepturus*. In the Atlantic W.A.K. saw one at $26\frac{1}{2}^{\circ}\text{N}$. 69°W . on 6 April, 1963. In the Indian Ocean N.G.C. saw them at 5°N . 50°E . and 10°S . 45°E . on 26 and 27 October, 1962, and J.O.B. saw two at 6°S . 50°E . on 18 December, 1962. In the Pacific J.B.M. had them at 8°S . 107°E ., 9°S . 123°E . and two at 9°S . $134\frac{1}{2}^{\circ}\text{E}$. on 23, 26 and 28 September, 1963, a possible bird at $11\frac{1}{2}^{\circ}\text{S}$. 159°E . on 23 October, and two at 7°N . 121°W . on 15 December; R.O.M. had them at $31\frac{1}{2}^{\circ}\text{N}$. 147°E ., 2°S . $147\frac{1}{2}^{\circ}\text{E}$. and 2°S . 154°E . on 7, 8 and 13 November, 1962, one aboard at $5\frac{1}{2}^{\circ}\text{S}$. 174°W . on 26 March, 1963, two at 27°S . $176\frac{1}{2}^{\circ}\text{E}$. and one at $23\frac{1}{2}^{\circ}\text{S}$. $177\frac{1}{2}^{\circ}\text{E}$. on 14 and 15 February, two at $20\frac{1}{2}^{\circ}\text{S}$. $178\frac{1}{2}^{\circ}\text{E}$. on 8 June and 8°S . 173°E . on 8 July, and one at $6\frac{1}{2}^{\circ}\text{S}$. 171°E . on 22 August; and N.M. had them at 13°S . 143°W ., 15°S . 148°W ., 17°S . 170°W . and 17°S . 174°W . on 13, 15, 21 and 22 January, 1963. J. A. F. Jenkins had one aboard at 13°S . 179°E . early in the morning of 5 February, 1963; its length including the tail was 775 mm., its wingspan 611 mm.

B. Stonehouse reports that while they also nest throughout the year on Ascension, individuals only have a period of 5–6 months between successive layings, with possible peaks in March and December during the time of his visit; which suggests that they may nest more often than once a year; the breeding rhythm may have been disturbed by competition for holes from the larger species, however (Ibis 103b: 124–161). K. H. Voous reports a bird collected off the Truk Is. had a squid *Symplectoteuthis nualanienensis* Lesson in its stomach (Ardea 51: 252).

Gannets and Boobies: Family *Sulidae*.

Northern, Cape, and Australian Gannets *Morus bassanus* M. (*b.*) *capensis*, and *M.(b.)serrator*. We have many routine records from both sides of the North Atlantic, off South Africa, and New Zealand. The most interesting include several seen off San Miguel in the Azores by W.A.K. on 29 December, 1962, and a number of records from West Africa by D.S. in this cold winter, starting with thirty adults and immatures at 19°N . $17\frac{1}{2}^{\circ}\text{W}$. on 13 November, at $23\frac{1}{2}^{\circ}\text{N}$. $16\frac{1}{2}^{\circ}\text{W}$. and 14°N . $17\frac{1}{2}^{\circ}\text{W}$. on 10 and 17 January, and at 21°N . 17°W . on 15 February, in March 140 at 21°N . $17\frac{1}{2}^{\circ}\text{W}$. on the 5th, 250 at $14\frac{1}{2}^{\circ}\text{N}$. $17\frac{1}{2}^{\circ}\text{W}$. on the 14th, 120 at $26\frac{1}{2}^{\circ}\text{N}$. 15°W . on the 15th, and 200 adults at 22°N . 17°W . on 4 April.

J. D. Macdonald has described how the nostrils have become blocked with the development of secondary nares at the angles of the jaws instead and some atrophy of the salt gland; which may or may not be an adaptation for the diving habit (Proc. Zool. Soc. London 135: 357–363). J. B. Nelson describes in detail the colony on the Bass Rock in Scotland and behaviour there (Scot. Birds 3: 99–137), and also important experiments which show that these birds which normally lay only one egg are quite capable of rearing two young when given another (Ibis 106: 63).

77). In South Africa R. W. Rand, G. J. Broeckhuysen and R. Liversidge describe the biology, distribution and movements of the allied Cape Gannet (Ostrich Supp. 3: 31-33, 32: 1-19), while A. H. Chisholm provides an account of the sad downfall through human predation of one of the four great SE Australian gannetries (Vict. Nat. Melbourne 75: 188-192).

Blue-footed Booby *Sula nebouxi*. N.M. reports them all day near the Galapagos at 2°N. 95°W. on 4 January, 1963. It seems probable that most of the "Brown Boobies" reported at sea in this area are really this species.

Blue-faced, White or Masked Booby *Sula dactylatra*. In the Caribbean area J.G.W. reports 200 at 16½°N. 68°W. on 2 October, 1963. In the east Pacific he had one at 7°N. 82°W. off Panama on 13 August, 1963, and along this coast W.A.K. had several on the equator at 80½°W. on 18 November, 1962, four at 3°N. 80½°W. on 15 December, one at 11°N. 89½°W. and another at 15°N. 96½°W. on 3 and 4 August, 1963, eight off Pt. St. Melno Light at 20°N., twenty at 15°N. 97°W. and many at 12°N. 91°W. on 12, 13 and 14 September. In the area north of the Galapagos J.G.W. had three at 10½°N. 91½°W., 16 at 13°N. 96°W., one at 21°N. 108°W. and ten at 8°N. 93°W. on 15, 16 and 19 August and 26 September, 1963, R.O.M. saw a possible bird in the distance at 3°S. 171½°W. off Canton Id. on 28 March, 1963 and one at 23½°S. 178°E. on 8 April, and J.B.M. saw a possible one at 22°S. 156°E. on 25 October. In the Indian Ocean there are occasional records from the southern Red Sea and many from the south coast of Arabia between 12°-22°N. and 40°-60°E., while N.G.C. also reports one at 5°S. 50°E. and two at 10°S. 45°E. on 26 and 27 October, 1963, and one at 2½°S. 48°E. on 8 November.

D. F. Dorward has described the behaviour of this and other boobies breeding on Ascension; this one breeds annually, as it does elsewhere, laying about July, and has a distinctive continuous moulting cycle, starting at about 7 months of age, and occurring simultaneously at three foci which follow each other progressively around the bird (Ibis 103b; 174-234).

Red-footed Booby *Sula sula*. In the Indian Ocean N.G.C. reports fifteen catching and swallowing flying fish in the air with occasional dives which came and roosted on board at 8°S. 45°E. on 7 November, 1962, and J.O.B. saw four at 6°S. 50°E. on 18 December. Around the East Indies E.J.D. saw a large flock at 8°N. 118½°E. on 19 August, 1963, and R.O.M. had one at 5°N. 146°E. on 6 November, 1962. In the east Pacific he had one at 23½°S. 179°E. and fourteen at 20½°S. 178½°E. on 7 and 8 June, 1963, and in the west Pacific J.B.M. had five at 6°N. 153°W. on 9 December, 1963, hundreds off Fanning Id., and very many at 7°N. 83°W. on 22 December, N.M. had one at 7½°N. 124°W. on 9 January, 1963, J.G.W. had one at 10½°N. 91½°W. and 48 at 18°N. 104°W. on 15 and 18 August, 1963, and W.A.K. had two at 11°N. 90°W. on 14 September, 1963, one of which followed the ship for 230 miles, J. Verner has described the breeding behaviour in British Honduras (Auk 78: 573-594), and Dorward also gives a note on the few birds at Ascension.

Brown Booby *Sula leucogaster*. We have many records of this species. In the Atlantic D.S. reports twenty at 10°N. 16°W. on 16 January, 1963, J.G.W. one at 13°N. 74½°W. on 10 August, and W.A.K. eight at 8½°N. 79½°W. on 14 November. In the west Pacific J.G.W., J.B.M., and W.A.K. report a number off the American coast between 7°-21°N., and N.M. saw four at 15°S. 148½°W., one at 17½°S. 170°W. and four at 17°S. 174°W. on 14, 21 and 22 January, 1963. E.G.M. saw 200 off Christmas Id. on 13 August, 1962. In the east Pacific and East Indies N.M. reports nine at 24°S. 152°E. off Queensland on 9 March, 1963; E.G.M. one at 9½°S.

101½°E. on 5 September, 1962; R.O.M. one at 3°N. 108½°E. and 5°N. 113°E., eight at 7°N. 116½°E. and two at 5°N. 124°E. on 25, 26, 27 and 29 October, 1962; J.B.M. seven at 9°S. 112°E. and two at 9°S. 123°E. on 24 and 25 September, 1963, one near Port Moresby on 3 October, one at 11½°S. 159°E. on 23 October, and a few at 6°N. 153°E. on 9 December; J.N.H. one south of Labuan, three at 2°N. 110½°E., six off Brunei Bay, and one off south Labuan on 1, 2, 8 and 11 May; and E.J.D. had two at 6°N. 95°E. on 6 September, 1963. In the Indian Ocean numbers were seen around the southern Red Sea islands, Socotra and southern Arabia, and J.D.S. also had one at 8°N. 59½°E. on 20 June, 1963, and off Colombo on 30 September, and J.O.B. had one at 6°S. 50°E. on 18 December, 1962.

D.F. Dorward reports that it shows a peak of breeding every eight months on Ascension, though the breeding season still lasts six months. Unlike the Gannet, although this bird normally lays two eggs, they proved unable to rear two chicks, the younger normally dying, while in common with other seabirds most of the young died during a period of apparent food shortage in August–September, 1958 (Ibis 103b: 174–234).

Cormorants and Shags: Family *Phalacrocoracidae*.

We have few records. J.G.W. identified as Brandt's Cormorant *Phalacrocorax penicillatus* two birds chasing fish among a large herd of dolphins at 24°N. 112°W. some 32 miles off the coast of Lower California on 20 August, 1963. D.S. also reports Pigmy Cormorants (presumably Reed Cormorants *Haliastur africanus*?) between Freetown and Pipil, West Africa, on 14 January, 1963. Mrs. B. Snow has also recently studied European Shags *Phalacrocorax aristotelis* on Lundy (Ibis 102: 554–575).

Frigate-birds: Family *Fregatidae*.

We have a fair number of records, some of which are referred to particular species, but they are often hard to identify at sea except by inference from the locality.

In the North Atlantic and along the coasts of the Americas all records presumably refer to the Magnificent Frigate-bird *Fregata magnificens*. N.M. reports two at 17°N. 77°W. on 28 December, 1962, and J.G.W. two in a hurricane at 16½°N. 68°W. on 2 October, 1963. In the east Pacific N.M. reports two near the Galapagos at 2°N. 95°W. on 4 January, 1963, and J.G.W. two off Mexico at 24°N. 112°W. on 20 August, 1963. J.G.W. also reports two Greater Frigate-birds *Fregata minor* at 8°N. 93°W. near the Galapagos on 26 September, 1963, N.M. reports two of these and a Lesser Frigate-bird *Fregata ariel* in the Tuamotus at 10°S. 132°W. on 11 January, 1963, and R.O.M. five Greaters off Canton Id. at 3°S. 171½°W. on 28 March, 1963.

Around the East Indies, where these seem to be dominant seabirds, J.B.M. reports a possible Christmas Frigate-bird *Fregata andrewsi* at 9°S. 123°E. on 26 September, 1963, two off Port Moresby on 2 October, hundreds with terns over a shoal of fish at 10°S. 151°E. off the Kiriwana Is. and a few off Lac on 4 and 5 October, and two at 4½°S. 174°E. on 18 November. R.O.M. reports a "Greater" at 7°N. 117°E. on 27 October, 1962, and J.N.H. twelve and later five possible "Lessers" off Pulau Tioman, Malaya, and six more in the distance off Mersing on 5–8 August, 1963. E.G.M. reports six Christmas Frigate-birds over boobies at 11°S. 106°E. off Christmas Id. on 13 August, 1962. In the Indian Ocean J.O.B. reports at least three in the distance at 4½°S. 43°E. and two possible "Greaters" and three "Lessers" at 6°S. 50°E. on 16 and 18 December, 1962; N.G.C.

reports one "Greater" at 1°S. 54°E. and 45 with 20 "Lessers" in two flocks going NE at 10°S. 45°E., 28 miles from Aldabra, on 25 and 27 October, 1962; and N.M. reports one "Greater" at 7°S. 54°E. on 12 April, 1963.

A detailed study of some 8,000—10,000 Ascension Frigate-birds *Fregata aquila* at the colony on Boatswain-bird Rock has been made by B. and S. Stonehouse (Ibis 103b: 409–422). They breed throughout the year, but most lay in October. The old birds share incubation and feed the young by regurgitation. Many young die during the first three weeks, especially in overcrowded areas; the remainder take six or seven months till they fly, three or four more before they become independent of their parents. Their strange bathing behaviour is described by W. V. Kiehlhorn (Condor 65: 240–251).

Phalaropes: Family *Phalaropodidae*.

Here also we have a long series of records only some of which are doubtfully identified as to species. D.S. gives a long series of records of up to sixty from the wintering area between 8°—24°N. and 13°—18°W. off West Africa where apparently Grey Phalaropes *Phalaropus fulicarius* prevail for the period between 8 September, 1962 and 12 April, 1963. Further north on autumn passage he saw two at 34½°N. 11°W. and six at 38½°N. 11½°W. on 15 and 16 September, 1962, and K.D.A.L. reports many, he thought also Grey, off Labrador at 51°N. 58°W. on 14 October, 1963. B. L. Sage, B. King and B. S. Milne also report the appearance of many Greys and a few Red-necked Phalaropes *Lobipes lobatus* in the west of Britain with west winds in the autumn of 1957 and 1959 (Brit. Birds 52: 33–42, 53: 403). J.G.W. found what appears to be the latter dead and "high" on board at 19°N. 64½°W. off the Virgin Is. on 5 October, 1963.

P.P.O.H. and others produce further records of up to 500 Red-necked Phalaropes from the equally well-known wintering area off the south coast of Arabia between 12°—25°N. and 50°—59°E. from 15 October to 10 May, and also 10,000 with terns, shearwaters and other birds along a tidal mark at 22½°N. 60°E. off Ras al Hadd on 8 May, 1963. In the west Pacific J.N.H. reports forty Red-necked four miles off Waslan Light, Hong Kong, on 23 September, 1963, J.B.M. a large flock on the water at 9°S. 118°E. and many flocks at 9°S. 123°E. on 25 and 26 September, 1963 and R.O.M. one at 6°N. 127°E. on 30 October, 1962 in the wintering north of the East Indies. In the east Pacific J.G.W. reports as Wilson's Phalarope *Steganopus tricolor* four birds seen at 18°N. 104°W. off Mexico on 18 August, 1963, but a bird-in-hand form from the same area next day agrees better with a Red-necked; his two forms give the overall length as 140 and 156 mm. and the wingspan as 240 and 280 mm. R. M. Gilmore has also published a record of a Grey Phalarope far offshore in this region at 22°N. 125°W. (Condor 61: 227).

Skuas or Jaegers: Family *Stercorariidae*.

Great Skua or Bonxie *Catharacta skua*. There is the usual large number of records at sea in the NE quarter of the Atlantic, ranging west to one seen at 41°N. 51°W. by K.D.A.L. on 4 June, 1963, and east to one seen off Pantelleria in the Mediterranean by J.D.S. on 24 October, 1963. D.S. saw a number off Morocco in the winter and one as far south as 19°N. 17½°W. on 6 February, 1963; one at 13°N. 17½°W. on 30 September 1962 may just as well have come from the south. In the Indian Ocean N.G.C. describes a southern migrant seen at 6°N. 81°E. off Ceylon and a

probable bird at $20\frac{1}{2}^{\circ}\text{N}$. $62\frac{1}{2}^{\circ}\text{E}$. on 9 and 13 September, 1962, and in the Pacific J.B.M. reports a "large skua" at 2°N . $87\frac{1}{2}^{\circ}\text{E}$. on 19 September, 1963; further south we have a number of reports off New Zealand, New South Wales, and South Africa. The breeding behaviour of this species has recently been studied in the north by A. C. Perdeck in Shetland (Ardea 48: 111-136), while C. R. Eklund and E. C. Young have investigated the representative form *C. macconnicki* in Antarctica (Bird Banding 32:187-222; Ibis 105: 203-233, 301-318).

Pomarine Skua *Stercorarius pomarinus*. We have many records of small skuas of varying reliability, and most from the tropics probably refer to this species. D.S. reports up to thirty off West Africa on many occasions from late September 1962 to mid April 1963; the water temperature varied between 16° — 25°C ., but was usually under 20°C ., which suggests they keep to cool upwelling water. Further north S.E.C. had one at $52\frac{1}{2}^{\circ}\text{N}$. 15°W . on 17 September, 1962, and D.S. thirty off Cape Finisterre that day, and P.A.D. had one off the Bass Rock on 4 September, 1963, among other records. In the Caribbean W.A.K. had four at 16°N . 69°W . on 20 December, 1962, in the east Pacific he had two at $7\frac{1}{2}^{\circ}\text{N}$. $82\frac{1}{2}^{\circ}\text{W}$. and one at 11°N . 89°W . on 11 and 13 April, and N.M. had one at $\frac{1}{2}^{\circ}\text{N}$. 100°W . on 4 January, 1963. In the west Pacific J.O.B. had thirty at 39°S . $147\frac{1}{2}^{\circ}\text{E}$. on 18 February, 1963, and in the Indian Ocean N.G.C. had one chasing terns ten miles off Bombay on 18 October, 1962, two at $1\frac{1}{2}^{\circ}\text{N}$. $55\frac{1}{2}^{\circ}\text{E}$. on 22 October, and one at 30°N . 49°E . at the Head of the Persian Gulf on 15 November.

Arctic Skua *Stercorarius parasiticus*. We have comparatively few notes, though a good many unidentified small skuas or winter "Pomarines" might be this species. D.S. reported birds at 42°N . 10°W . on 28 August, 1962 and $23\frac{1}{2}^{\circ}\text{N}$. 17°W . on 28 September, W.N.H.J. one at 60°N . 17°W . on 18 September, 1963, and D.S. others at $31\frac{1}{2}^{\circ}\text{N}$. 13°W . and 27°N . 16°W . on 2-3 April, 1963. A pale skua seen by P.P.O.H. harrying terns in the Suez Canal on 15 May, 1963 may have been this species, as may birds seen by W.A.K. at 38°N . 51°W . on 30 October, 1962, and 35°N . next day. K.D.A.L. also reported as this species one at 40°N . 69°W . on 20 April, 1963, three at 40°N . 58°W . next day, and perhaps one at 48°N . 30°W . on 3 May, 1963. Back records by P.W.P. are given under the next species.

Long-tailed Skua *Stercorarius longicaudus*. P.W.P. saw 96, with two Arctic and one Pomarine, in the Atlantic at 50°N . $37\frac{1}{2}^{\circ}\text{W}$., and six more, with 50 Arctic and five Pomarine, at $48\frac{1}{2}^{\circ}\text{N}$. 47°W . on 20 and 21 August, 1958. D.S. reports one off Finisterre on 17 September, 1962, and K.D.A.L. reports one at 46°N . 43°W ., three at 45°N . 50°W . and one at 44°N . 39°W . on 10, 11 and 23 April, 1963, and four at 43°N . 51°W ., one at 40°N . 66°W . three at 40°N . 56°W . and five at 51°N . 15°W . on 5, 10, 11 and 15 May. E.F.A. describes a number seen at 49°N . 43°W . on 22 May, 1963; they appeared flying around in many directions, at up to 200-300 ft. at 1800-1900 hrs., occasionally coming close to the ship. A few had short tails and may have been Arctic Skuas, but most were in the light phase with long tails, with up to thirty in sight at once. They disappeared at sunset, about 1915 hrs., though a few were seen later.

Gulls: Family Laridae.

These are mainly coastal, and we receive few or no records of many species except where they are forced out to sea by bad weather, as we reported last year (pp. 60-61) happened in the cold spring of 1963. We therefore propose to ignore most of the growing volume of work ashore

which involves mainly their behaviour (popular summary by N. Tinbergen in *Scientific American* 203(6): 118-130; see also M. Moynihan in *Amer. Mus. November 1928 and Behaviour Supp.* 8), and also their distribution and movements (for work in Britain, see J. A. G. Barnes, F. C. Gribble, F. Hamilton, M. P. Harris, R. A. O. Hickling and M. C. Radford in *Bird Study* 7: 32-52, 81-93; 8: 127-147; 9: 42-79, 100-103, 174-182, 192-197 and 11: 189-191). One note by Harris in which he reports that young gulls of the same age may vary in appearance deserves comment; it appears that in common with other seabirds they may mature at a variable rate. Most gulls also resemble other seabirds in completing the main moult after the breeding season, but D. W. Johnson reports that in the short summers of Alaska Glaucous Gulls may breed and moult simultaneously (*Condor* 63: 474-478).

Red Sea Black-headed or White-eyed Gull and Aden Gull *Larus leucophthalmus* and *L. hemprichi*. We have the usual records of the first for the Red Sea and the second for the region of the Gulf of Aden, including a hundred seen flying to Quiblya Id. at $17\frac{1}{2}^{\circ}\text{N. } 56\frac{1}{2}^{\circ}\text{E.}$ by P.P.O.H. on 23 October, 1963. M. P. L. Fogden and C. S. Clapham have recently investigated them in detail; it appears that whereas the Aden Gull is a relatively solitary scavenging coastal species, the other feeds more socially on shoals of fish out at sea (*Ibis* 106: 299-320, 376-388).

Common Gull *Larus canus*. I have recently joined with I. J. Patterson in describing the migration in the Scottish area, where it involves a slow westward dispersal in autumn followed by a quick return flight in spring (*Scot. Birds* 2: 1-15). S.E.C. saw twelve far out in the Atlantic at $50\frac{1}{2}^{\circ}\text{N. } 30\frac{1}{2}^{\circ}\text{W.}$ on 14 January, 1963, while D.S. reports an adult as far south as $21^{\circ}\text{N. } 17\frac{1}{2}^{\circ}\text{W.}$ on 5 March.

Herring, Great Black-backed and Glaucous Gulls *Larus argentatus*, *L. marinus* and *L. hyperboreus*. During the cold spell of early 1963 S.E.C. saw four Herring Gulls and a Great Black-back at $51\frac{1}{2}^{\circ}\text{N. } 15^{\circ}\text{W.}$ on 12 January, one with the Common Gulls two days later, three Great Black-backs and a Glaucous Gull at $48^{\circ}\text{N. } 44^{\circ}\text{W.}$ on 16 January, and a number of Great Black-backs subsequently, including one at $48\frac{1}{2}^{\circ}\text{N. } 47^{\circ}\text{W.}$ and another at $52^{\circ}\text{N. } 21^{\circ}\text{W.}$ on 1 and 6 February, four at $50^{\circ}\text{N. } 32\frac{1}{2}^{\circ}\text{W.}$, one at $48\frac{1}{2}^{\circ}\text{N. } 38\frac{1}{2}^{\circ}\text{W.}$, six at $47^{\circ}\text{N. } 42^{\circ}\text{W.}$ and two at $45\frac{1}{2}^{\circ}\text{N. } 45\frac{1}{2}^{\circ}\text{W.}$ on 4, 5, 6 and 7 March.

Lesser Black-backed and Dominican or Southern Black-backed Gulls *Larus fuscus* and *L. dominicanus*. We have a number of records of the first from recognised wintering areas off West Africa and Arabia, and of the second from South Africa. Its behaviour in New Zealand has been studied by R. A. Fordham and F. C. Kinsky, who confirm the impression that it is a southern representative of the first species (*Notornis* 10: 206-222, 11: 3-34; *Rec. Dom. Mus. Wellington* 4: 149-219).

Franklin's Gull *Larus pipixcan*. J.B.M. saw a few gulls off Fanning Id. in the Line Group of the Central Pacific in early December 1963. They were medium-sized, grey and dirty white, with dark bills and feet. He thought they might be this species, which was reported in both Hawaii and Nukuhiva in the Marquesas on either side of this area by J. E. King in May 1958 (*Condor* 61: 226).

Northern Black-headed Gull *Larus ridibundus*. W.A.K. had one out in the Atlantic at $35^{\circ}\text{N. } 30^{\circ}\text{W.}$ on 28 December, 1962, and S.E.C. two with the Common Gulls at $50\frac{1}{2}^{\circ}\text{N. } 30\frac{1}{2}^{\circ}\text{W.}$ on 14 January, 1963,

while D.S. also saw one with the Common Gull at 21°N. 17½°W. on 5 March. P.P.O.H. had fifty in the Straits of Gibraltar on 23 February, 100 at Tripoli in the Lebanon on 2 March, 1,000 in Suez Bay on 12 December, 1963, and 24 at 30°N. 49°E. at the head of the Persian Gulf on 19-20 October, 1963. J.N.H. had one in Brunei Bay, Borneo, and six reported from Labuan on 31 December, 1962, one at Labuan on 7 February, 1963, and several starting black heads there on 23-30 March.

Little Gull *Larus minutus*. We get curiously few records of this species, which winters in force in the Mediterranean as shown by C. Erard in ringing analyses (*Alauda* 28: 196-228, 31: 285-293). It has recently made history by colonising the New World, where it was found breeding near Toronto by G. A. Scott in 1962 (*Auk* 80: 548-549); these birds apparently migrate down through the Great Lakes to winter uncommonly along the Atlantic seaboard.

Kittiwake *Rissa tridactyla*. There are the usual records of numbers in the northern Atlantic, mainly off the continental coasts in summer but ranging right across from October to April; there is also a back record of thousands around trawlers at 55½°N. 1°W. off the great breeding colonies along the NE coast of Britain by A.F.G.W. and R.H. on 25 August, 1958. Breeding behaviour in this area continues to be studied by J. C. Coulson and his associates in many papers (*Brit. Birds* 52: 191-196, 55: 171-177; *Ibis* 101: 253-254, 102: 71-92, *Bird Study* 6: 97-102, 10: 147-179; *Proc. Zool. Soc. London* 136: 207-217, 140: 211-227). H. Hogerson has also shown ringed Norwegian birds disperse in all directions (*Vogelwarte* 21: 118-121), and M. T. Myres reports that radar shows that in summer Shetland birds fly NNW at dusk, returning at dawn, presumably to roost or feed somewhere out at sea to the north (*Bird Study* 10: 34-43). Information on quite what these birds are doing would be very useful.

Sabine's Gull *Xema sabini*. Mr. H. G. Alexander saw 25 flush off the water and go away south from S.S. Rhyndam at 43½°N. 52½°W. on 5 November, 1958, and eight 41½°N. 58°W. next day. D.S. also records more on both passages off West Africa, with two at 7½°N. 14°W. and one at 10½°N. 17°W. on 4 and 5 October, 1962, and three at 12°N. 17½°W. and 13½°N. 17½°W., eight at 21½°N. 17°W. and one at 25°N. 15½°W. on 6, 7, 13 and 14 April, 1963. The original account of the migration to South Africa by N. Mayaud and F. Roux was quoted last year; R. Liversidge and M. Courtney Latimer simultaneously gave a series of specimen and sight records going back to 1936 for South African waters between November and March (*Alauda* 29: 161-174, *Ann. Cape Prov. Mus.* 3: 57-60).

Dusky or Sooty and Swallow-tailed Gulls *Larus fuliginosus* and *Circus fuscatus*. Until recently little has been known of these two dark gulls of the Galapagos. A. M. Bailey has recently described the breeding of the first (*Condor* 64: 159-160); apparently it is a fairly normal coastal species. The second is very peculiar, nocturnal, feeding far out at sea at night and retiring to nest in dark places (J. P. Hailman, *Wilson Bull.* 76: 347).

Terns: Family *Sternidae*

We have many records of the pelagic species of this group, fewer of the others. Here there is again some difficulty in telling closely allied species apart, and we are forced to treat some groups together. It would be useful to see more keys to identification like those to the Common and

Arctic Terns by J. R. Jacobsen, the marsh terns by K. Williamson, and New Zealand gulls and terns by R. A. Falla (Dansk Orn. Foren. Tidsskr. 55: 89-96, Brit. Birds 53: 243-252, Tuatara 8: 72-76).

Black Tern *Chlidonias nigra*. We have a few records of migrants on both sides of the North Atlantic and in the Mediterranean. D.S. also has many records from the wintering area off West Africa. Important ones include a hundred at $17\frac{1}{2}^{\circ}\text{N}$, $17\frac{1}{2}^{\circ}\text{W}$. on 2 September, 1962, thirty at $7\frac{1}{2}^{\circ}\text{N}$, 14°W . on 4 October, 400 at $9\frac{1}{2}^{\circ}\text{N}$, $15\frac{1}{2}^{\circ}\text{W}$. on 15 November, a number between Freetown and 14°N , $17\frac{1}{2}^{\circ}\text{W}$. in January 1963, fifty off Monrovia on 10 February, a thousand with "Comic" terns at 8°N , 14°W . on 7 April, and countless numbers, some coming into summer plumage, at $21\frac{1}{2}^{\circ}\text{N}$, 17°W . on 13 April.

Common and Arctic Terns *Sterna hirundo* and *S. paradisaea*. Most records of "Comic" terns come from the North Atlantic, and probably involve mainly Arctic out at sea and Common nearer the shore. In the northern Atlantic K.D.A.L. reports the first two at 51°N , 38°W . on 12 February, 1963, six at 48°N , 34°W . on 9 April, seven at 48°N , 30°W . and five at 43°N , 51°W . on 3 and 5 May, and many on opposite sides of the Atlantic at 40°N , 66°W . and at 51°N , 15°W . on 10 and 15 May. E.F.A. noticed some 75 flying south calling at 100-300 ft. at 51°N , 16°W . at 0810 hrs. on 25 May. In summer K.D.A.L. saw occasional birds off the Azores, five at 39°N , 15°W . and many leaving New York at the height of autumn passage on 12 and 19 August, and the last at 51°N , 58°W . on 14 October. S.E.C. also had four at 58°N , 38°W . and 57°N , 30°W . on 23 and 24 August. D.S. had birds off western Europe on autumn passage, the first off West Africa at the end of August, thirty at 27°N , $15\frac{1}{2}^{\circ}\text{W}$. on 12 September, 1962, 100 at $22\frac{1}{2}^{\circ}\text{N}$, 17°W . on 14 March, 1965, 250 at 23°N , 17°W . on 4 April, and 1,000 at 8°N , 14°W . on 7 April, among other records.

Among recent literature on this group of terns are accounts of their aerial displays and breeding behaviour by J. M. Cullen (Ardea 48: 1-37, Proc. 12th. Int. Orn. Congr. Helsinki 153-157; analyses of British ringing recoveries by M. C. Radford (Bird Study 8: 174-184); a report of epidemic disease in Common Terns wintering off South Africa by M. K. Rowan (Brit. Birds 55: 103-114), and of ringing recoveries and winter occurrences of this species in the SW Pacific between the Cook Is. and Australia by C. S. Houston, W. B. Hitchcock and K. A. Hindwood (Bird Banding 34: 160-161, 35: 204).

White-fronted Tern *Sterna striata*. R.O.M. saw ten probable birds off New Zealand at 36°S , 175°E . on 12 February, 1963; J. L. McKean has recently reported ringed individuals from New Zealand wintering in Australia (Emu 60: 262-264).

Black-naped Tern *Sterna sumatrana*. In the East Indies J.N.H. reports eight off Pulau Aur, Malaya, on 31 July, 1963. R.O.M. reported this species off Manus Id. at 2°S , 147°E . on 13 November, 1962. He also saw two in Mbengga Passage, Fiji, on 5 July, 1963.

Sooty and Brown-winged or Bridled Terns *Sterna fuscata* and *S. anaethetus*. These are again also hard to tell apart at sea, and here also we have some uncertain identifications, though birds seen far out to sea are more likely to be Sooty, and those seen offshore, Bridled. In the Atlantic, D.S. reports five Sooties at 15°N , $17\frac{1}{2}^{\circ}\text{W}$. and one at 8°N , 14°W . off West Africa on 6 October, 1962 and 7 April, 1963, and J.G.W. three at 19°N , 64°W . and 150 at $16\frac{1}{2}^{\circ}\text{N}$, 68°W . in the West Indies on 7 August and 2 October, 1963. In the east Pacific N.M. reports three

Sooties at 3°N. 93½°W. on 4 January, 1963, and J.B.M. one at 7°N. 82½°W. on 21 December, with more there next day, and J.G.W. reports a Bridled Tern close at 8½°N. 87°W. on 14 August, and thirty at 10°N. 103°W. on 24 September. In the central Pacific J.B.M. reports two Sooty Terns or perhaps Spectacled Terns *Sterna lunata* at 4½°S. 174°E. on 18 Nov., and R.O.M. six terns of this group at 20°S. 178½°E. on 8 June and again at 8°S. 173°E. on 8 July, with two Sooties at 27°S. 176½°E. on 14 February and two Bridled off Canton Id. at 3°S. 171½°E. on 28 March.

Around the East Indies he had ten to twenty Sooty or Bridled on logs at 7°N. 116°E. on 27 October, 1962, and two Bridled leaving Manus Id. at 7°N. 147°E. on 13 November. J.B.M. reports scattered flocks of Sooties at 9°S. 123°W. off Timor and the Alor Is. on 26 September, 1963, and many at 8½°S. 134½°E. next day, and J.N.H. had six possible Bridled off Changi Point, Singapore, on 6 May, 1963. In the Indian Ocean P.P.O.H. and others report up to 100 Bridled Terns on many occasions around south Arabia, while to the south N.G.C. reports a Sooty aboard at 20°N. 70½°E. on 22 September, 250 between Gt. Basses Reef and Doudra Head, S. Ceylon, two at 12°N. 69°E., some flying SE at 2°N. 55½°E., fifty among large shoals of flying fish at 1°S. 54°E., 300 at 5°S. 50°E., twenty flying NE at 10°S. 45°E., 120 at 15°S. 142°E., forty at 20½°S. 38°E., twenty at 25½°S. 34°E., 110 at 21°S. 35½°E., ten at 13½°S. 42½°E., twenty at 8°S. 45°E., and ten at 25½°N. 57½°E. on 13, 19, 22, 25, 26, 27, 28, 29 and 30 October, and 2, 6, 7 and 13 Nov. J.N.H. also reported fifteen on the equator at 67°E. on 9 December, 1962.

The Sooty Tern is remarkable because while away from the central tropics it breeds annually, it has been shown by J. P. Chapin (Auk 71: 1-15, 76: 153-158) that near the equator this cycle breaks down, and it breeds every 9.7 months on Ascension in the Atlantic, and every six months on Christmas Island among other places in the central Pacific. N. P. Ashmole has shown that on Ascension some birds are present all year. They first start to settle on the breeding ground at night two months before laying, the parents incubate alternately in periods of up to six days, which suggests that they must travel far out to sea to feed. The rate of growth of the chicks varies with the availability of food, and when it is scarce they may starve. 9.7 month apparently represents the normal cycle for completion of successful breeding followed by a full moult in this species; he has since gone on to show that the Pacific birds curtail the moult in order to complete two breeding seasons in the year (Ibis 103b: 297-304, Postilla 76).

"Crested" Terns *Thalasseus* sp. We have a number of records of these, some of which are also of doubtful identity, especially where two or more species occur together. C. S. Clapham reports that in the southern Red Sea where the Lesser Crested and Swift (or Greater) Crested Terns *T. bengalensis* and *T. bergii* occur together the first resembles a Sandwich Tern *T. sandvicensis* with a yellow bill, while the second is relatively solitary and marine, with a thicker, paler yellow bill, a shorter, less forked tail, darker grey on the back, less black on the head, and flies with slower, steadier wingbeats, often gliding low over the water. The difference between the Sandwich and Royal Terns *T. sandvicensis* and *T. maximus* is probably rather similar in character in the Atlantic, except that here of course the first has the bill black with a yellow tip and the second has it red.

In the Indian Ocean we have a number of records of up to 200

assorted crested terns around southern Arabia, and E.G.M. had a young Lesser Crested aboard off Aden on 3 October, 1962; the overall length was 330mm., the wingspan 915 mm., the bill yellow, flesh inside, the legs and feet dull yellow with brown blotches and black claws.

Around the East Indies J.N.H. noticed occasional distant terns of this type, including one ten miles off Pulau Tioman, E. Malaya on 5 August, 1963, and a hundred at 7°N. 115½°E. on 10 September. R.O.M. identified three Swift Terns in Suva Harbour, Fiji, on 5 July, 1963.

Noddies *Anous* sp. Here also we have a number of records with the species uncertain. In the Atlantic J.G.W. reported thirty, apparently Common or Brown Noddies *A. stolidus* at 16½°N. 68°W. on 2 October, 1963. In the Indian Ocean P.P.O.H. reported 500 at 12½°N. 44°E. on 11 May, 1963, including one close by on a box which showed the white cap, and several thousand moving west in a stream ahead at 12½°N. 43°E. on 25 October. N.G.C. also reports ten "brown" noddies at 1°S. 54°E. and twenty at 5°S. 50°E. on 25 and 26 October, 1962, J.B.M. one at 2°N. 87½°E. on 19 September, 1963, some with Sooty Terns off Timor and the Alor Is. at 9°S. 123°E. on 26 September, and flocks at 14½°S. 176°E. in the Pacific on 16 November. In this region R.O.M. reports Lesser or Black Noddies *A. tenuirostris*=*A. minutus* off Manus Id. at 2°S. 147°E. on 13 November, 1962, and about a thousand in Mbengga Passage, Fiji, on 5 July, 1963.

The biology of both noddies has recently been studied on Ascension by N. P. Ashmole, J. M. Cullen and D. F. Dorward (Ibis 103b: 235-272, 423-457); J. Bond and S. D. Ripley have also summarised the scanty information on the Lesser Noddy in the Caribbean when reporting a colony from Venezuela (Auk 77: 473-474); they emphasise the difference in voice and nest-site as well as colour and size of the two species. We cite bird-in-hand forms for both in the table; the Common Noddy was grey to grey-brown and the Lesser Noddy grey-brown to black in colour; the wingspan of the first was 840 mm., that of the second 613 mm., with a length of 310 mm.

White Tern *Gygis alba*. N.G.C. reports two at 1°S. 54°E. and one at 10°S. 45°E. on 25 and 27 October, 1962. D. F. Dorward has also studied its biology on Ascension, where it lays about January, visiting the same ledge each year. Although it uses insecure ledges and twigs for nest sites, it apparently has a higher breeding success than other terns using more accessible places (Ibis 103b: 365-378).

Auks: Family *Alcidae*

These have been the subject of a number of special studies. M. D. F. Udvardy has speculated on the origin of the Pacific species and produced useful distribution maps (Proc. N. Pacific Sc. Congr. 85-111), L. M. Tuck has produced a definitive account of the biology of the guillemots (Monogr. Nat. Parks Branch Canad. Wildl. Serv. No. 1), and A. P. Kuzliakin and F. Richardson contributions on the Marbled Murrelet and Rhinoceros Auklet (Ornithologia 6: 315-320, Condor 63: 456-473).

Little Auk *Plautus alle*. From the NW Atlantic. K.D.A.L. had five at 45°N. 54°W. several at 46°N. 43°W., many at 45°N. 50°W., and 35 at 41°N. 67°W. on 14 February, 10, 11 and 13 April, 1963. W.N.H.J. had fifty in the Hudson Strait at 62°N. 70°W. on 5 August, 1963, and reports that they had gone by 8 September. S.E.C. had a male in summer plumage aboard at 59°22'N. 47°22'W. on 22 August, 1962. It was

215 mm long with a 385 mm. wingspan, and had three Mallophaga parasites indentified in the British Museum (Natural History) as *Sacmundsonia merguli* (Denny 1842).

Razorbill *Alca torda*. K.D.A.L. reports several at 45°N. 42°W. on 4 May, among others in offshore waters.

Common Guillemot or Murre *Uria aalge*. K.D.A.L. reports pelagic records including five at 48°N. 44°W., one at 48°N. 34°W. and 32 at 46°N. 43°W. on 14 February, 9 and 10 April, and several at 45°N. 42°W. on 4 May. Norwegian ringing recoveries are reviewed by H. Holgersen (*Sterna* 4: 229-240), and H. N. Southern has completed a third ten-year survey of "bridled" birds in the Atlantic which confirms they are commoner to the north and west and shows a reversal of any past changes in distribution (*Proc. Zool. Soc. Lond.* 138: 455-472).

Puffin *Fratercula arctica*. In the cold spring of 1963 D.S. recorded them south to 34°N. 13½°W. on 17 March.

REPORTS OF LAND BIRDS AT SEA

By CAPTAIN G. S. TUCK, D.S.O., R.N.

The land birds positively identified at sea during 1963 and 1964 in over forty separate sea passages are summarised in this report.

The actual position is shown in latitude and longitude; where also described in words this is merely as a rough guide. The letter d. followed by a point of the compass after the name of the bird shows the recorded direction of departure flight.

The scientific title has been omitted where in any one series of observations the same species, but not necessarily the same bird, is being reported.

INTRODUCTION

We have received a number of excellent reports, such as those from Commander J. N. Humphreys, R.N. (Singapore and North Borneo areas) and Captain R. Walgate (St. Lawrence River area) of land birds observed close inshore, but while these are of great interest they do not find a place in the analysis of birds in the open sea.

Ships crossing the North Atlantic between British ports, Canada and U.S.A. are reporting numbers of land birds in the open ocean. Not unnaturally it is observers in ships on passage through the Mediterranean and Red Sea, and those trading to ports on the west coast of North Africa that reap the greatest harvest.

The reader may wonder why so few reports show a direction of departure flight. It would appear that when land birds close and often settle on ships any urgency of directional flight disappears temporarily. Moreover small birds flying round a ship disappear from sight, or from their positions on deck or rigging in a most elusive way. It is an entirely different matter when flocks of large birds already in company and on purposeful flight are observed.

One aspect in studying reports as a whole is to trace any indication of truly ocean routes favoured by particular species on migration, and some instances of migratory movements are given in conclusion.

In the North Atlantic we already have some evidence of longitudinal belts favoured by the oceanic migrations of the Arctic, Long-tailed and Pomarine Skuas, but many more oceanic records will be necessary before any reliable ocean tracks of migrating land birds in general can be forecast. Our own records of sixteen observations over two years provide further indication of the route followed by Canadian and Greenland Turnstones *Arenaria interpres* on migration SE across the Atlantic described by I. B. and E. A. Falls and R. Harkness in the *Ibis* for 1955 (pp. 156-158):—

Starting from the North in mid August we have plots south of and midway between Cape Farewell in Greenland and Iceland in mid latitude 58°N and between 32°W and 46°W. Others in August and September between latitudes 40°N and 50°N and between 15°W and 20°W. Again starting from the South in Spring we have plots in late February 400 miles west north west of Coranna (Spain), and in May in 50°N in mid Atlantic between 20°W and 35°W. The combination of these plots shows no record east of 15°W, and a mean ocean track midway between Greenland and Iceland towards Madeira (and doubtless further south).

AN UNUSUAL REPORT

A report from the North Atlantic on 17th May, 1964, 360 miles northwest of Cape Finisterre and 400 miles west southwest of Lands End comes from Captain W. Stevens, m.v. Haparangi, New Zealand Shipping Co. Ltd., extracted from his meteorological log. Captain Stevens is not a member of R.N.B.W.S. (under R.N.B.W.S. standard report system) but his description which follows points to the bird having been a Cattle Egret *Ardeola ibis*.

Description:— "Not unlike a heron in shape. Medium sized. Snow white wings, yellow-brown on top of body except for white behind wings and across tail. Yellow-brown striped on crown. White beneath except for yellow-brown breast. Fairly long straight beak and fairly long legs with three long toes on feet."

On 13th May, 1959 we had a report of a Little Egret *Egretta garzetta* 200 miles northeast of Madeira and 220 miles northwest of the northwest coast of Morocco.

MEDITERRANEAN

Once again only extracts are shown in the analysis. In all since 1st January, 1964, we have received 105 separate observations comprising 452 land birds of 42 different species. During the last three weeks in October, 1963, it is noticeable that there was a heavy fall of small passerines in the southern half of the Mediterranean between Benghazi and Cape Bon.

The wind was generally north northwest moderate to fresh during this period and birds were arriving from the northeast and departing south southwest.

SUMMARY OF SOME PREVIOUSLY RECORDED OBSERVATIONS OF SPECTACULAR MIGRATORY MOVEMENTS

[“Yea, the Stork in the heaven knoweth her appointed times; and the Turtle and the Crane and the Swallow observe the time of their coming. Jeremiah 8, verse 7.]

WHITE STORKS *Ciconia ciconia*.

Aug. 31st, 1957. Gulf of Suez from G. Hammon Sayida Musa in a southerly direction towards Ras Shukheir, flying at 100-150 feet above the sea. Captain P. P. O. Harrison reports the wonderful spectacle of a great mass of White Storks in huge flocks as far as the eye could see in both directions, and estimates the number at 100,000.

On Sept. 1st, 1957 Commander J. N. Humphreys passed through the same area and saw the migration still continuing.

April 3rd, 1962. Gulf of Suez from Gebel Leit towards Sheikh Rujak flying north 30 degrees east at 1500 feet. Lieut. M. B. Casement, R.N. reports 5,000 to 10,000 White Storks.

May 21st, 1962. Sicilian Channel. H.M.S. Owen reports over 100 White Storks flying northwards.

PURPLE HERONS *Ardea purpurea*.

April 12th, 1962 in 36°54'N, 26°07'E, 20 miles east of Naxos, flying east northeast at 500 feet. Lieut. M. B. Casement reports 200 to 300

PURPLE HERONS *Ardea purpurea*.

April 15th, 1962 in 34°10'N, 13°48'E, 20 miles north of the Tripoli, flying east northeast at 800 to 1,000 feet, Lieut. M. B. Casement reports 30 to 50 Purple Herons.

August 25th, 1964 in 34°02'N, 31°07'E, 100 miles southwest of Cyprus, flying south and passing through the U.S. 6th Fleet, Capt. P. P. O. Harrison reports over 50 Purple Herons.

BLACK KITES *Milvus migrans*.

We have had a number of reports of congregations of Black Kites from the Red Sea but not necessarily indicating a migratory passage. In April, 1963, many Black Kites settled on the rigging of H.M. Yacht Britannia, and again on 9th Nov., 1963 Commander J. N. Humphreys reports a swirling spiral of raptors at 1,000 feet over Perim Island which were probably this species.

On April 21st, 1961 Capt. W. L. N. Fiske reports over 50 Black Kites on board for two days and nights as his ship steamed southwards from off Port Sudan. At daybreak on the third day the Kites departed. [Note: These were incorrectly reported as Red Kites in *Sea Swallow*, Vol. 14, 1961, p. 43.]

QUAIL *Coturnix coturnix*.

September 26th, 1962, 12 miles northeast of Skyros in the Mediterranean, coming on board H.M.S. Centaur from the north during heavy rainstorms. Lieut. M. B. Casement reports 'a blizzard of Quail on board—many hundreds—many killed by hitting the Aircraft Carrier's superstructure—dozens swept up dead.'

LAND BIRDS EXAMINED IN THE HAND

Since 1st January, 1964, nineteen report forms covering eighteen different species have been received:—

Captain P. P. O. Harrison, Willow Warbler. Captain W. N. H. Jarvis, Swallow. Captain G. S. Ritchie, R.N., Sardinian Warbler, Meadow Pipit, House Martin. Captain R. Walgate, Turnstone, Northern Water Thrush, Ringed Plover, Yellow-throated Vixen, Olive-backed Thrush, Magnolia Warbler, Wheatear. Chief Officer J. H. Agnew, Crag Martin. Third Officer S. E. Chapman, American Redstart. Commander J. N. Humphreys, R.N., Blue-winged Pitta, Fantail Warbler, Eastern Great Reed Warbler. Lieutenant M. B. Casement, R.N., River Warbler.

I would like to thank all members for the number and quality of reports forwarded.

LAND BIRDS AT SEA

EASTERN NORTH ATLANTIC—EAST OF 30°W AND NORTH OF 30°N

From records of: J. G. Worgan, H.M.T.S. Monarch. Capt. P. P. O. Harrison, s.s. Kent. 3rd Officer J. D. Simon, s.s. Nyanza. Capt. E. F. Aikman, s.s. Beaverpine. 2nd Eng. J. O. Brinkley, M.S. Mabel Warwick. Capt. G. S. Ritchie, R.N., H.M.S. Vidal. N. G. Cheshire, M.V. British Cygnet. Steward E. P. Agate, H.M.S. Protector. 3rd Officer S. E. Chapman, M.V. Cienfuegos.

DATE	POSITION	SPECIES 1963	OBSERVER	REMARKS
July 27	49°N, 8°W, 170m. SW of Land End	1 Curlew (<i>Numenius arquata</i>) d.s.	J.G.W.	
Sep 24	32°22'N, 10°58'W, C. Sim Morocco 128°, 80m.	1 Spotted Flycatcher (<i>Muscicapa striata</i>)	P.P.O.H.	
	31°58'N, 11°23'W, C. Sim 112°, 90m.	2 Turtle Doves (<i>Streptopelia turtur</i>)	P.P.O.H.	
Oct 3	33°10'N, 9°39'W, C. Blanc du Nord Morocco 096°, 47m.	3 Turtle Doves	P.P.O.H.	One on board injured
Oct 25	Round ship off Ushant	Considerable southerly migration of small passerines in English Channel. Many flocks of birds, Blackbirds, Starlings, Robin, Thrush, Meadow Pipit, 1 Red breasted Flycatcher (<i>Muscicapa parva</i>) identified.	N.G.C.	
Oct 26	44°53'N, 8°28'W, Central Bay of Biscay	1 Meadow Pipit, 4 Chaffinches, 1 drake Mallard (<i>Anas platyrhynchos</i>)	N.G.C.	
Oct 27	45m. SW of Ushant	1 Chaffinch (<i>Fringilla coelebs</i>), 2 Starlings (<i>Sturnus vulgaris</i>)	J.D.S.	
Nov 2	53°34'N, 30°W, 800m. W of Ireland and 800m. SSW Iceland	1 Rustic Bunting (<i>Emberiza rustica</i>)	E.F.A.	Observed on deck from 10 ft. Identity definite
1964				
Feb 2	36°45'N, 8°29'W, 20m. S of C. Sta Maria, Portugal	1 Hoopoe (<i>Upupa epops</i>)	P.P.O.H.	Sitting on deck
Mar 7	55°N, 0°46'W, North Sea 85m E of Newcastle	1 Long-eared Owl (<i>Asio otus</i>) d.s.w.	J.O.B.	Mobbed by Herring Gulls. Landed on deck
Apr 15	33°N, 12°30'W, 200m. E of Madeira	2 Turtle Doves (<i>Streptopelia turtur</i>)	J.O.B.	
Apr 30	32°30'N, 13°45'W, 150m. E of Madeira	1 Yellow Wagtail (<i>Motacilla flava</i>), 2 Turtle Doves	J.O.B.	

LAND BIRDS AT SEA

EASTERN NORTH ATLANTIC—EAST OF 30°W AND NORTH OF 30°N

DATE	POSITION	SPECIES 1964	OBSERVER	REMARKS
Apr 24	36°18'N. 8°37'W.	1 Woodchat Shrike, (<i>Larius senator</i>), 1 Wheatear (<i>Oenanthe oenanthe</i>), 3 Turtle Doves, 1 Hoopoe (<i>Upupa epops</i>), 4 House Martins, 1 Swift, 1 Ortolan Bunting (<i>Emberiza hortulana</i>)	G.S.R.	
May 1	37°15'N. 12°W. SW of C. St. Vincent	1 Turtle Dove	J.O.B.	
May 2	41°30'N. 10°30'W.	1 Turtle Dove	J.O.B.	
May 7	35°14'N. 6°20'W.	1 Meadow Pipit (<i>Anthus pratensis</i>)	G.S.R.	Examined in hand
May 8	30°01'N. 14°53'W. Canary Is.	4 Turtle Doves, 20 Swallows, 12 House Martins, 11 Stone Curlews (<i>Burhinus oedichenemus</i>)	E.F.A.	All d.N.
May 10	35°11'N. 7°22'W.	1 Blue-headed Wagtail (<i>Motacilla flava</i>), 1 Ringed Plover (<i>Charadrius hiaticula</i>)	G.S.R.	
May 10	33°N. 14°W. E of Madiera	2 Turtle Doves, 4 Swifts, 2 Swallows, 2 Meadow Pipit, 1 Yellow Wagtail	E.F.A.	All d.N.
May 12	40°30'N. 11°W.	1 Turtle Dove, 1 Swallow	J.O.B.	
May 13	35°N. 8°W.	1 Sardinian Warbler (<i>Sylvia melanocephala</i>), 1 House Martin	G.S.R.	Both examined in hand
May 13	36°N. 11°30'W	1 "Phylloscopus" Warbler 1 Swallow, 1 Turtle Dove	G.S.R. J.O.B.	Examined in hand, Probably Melodius Warbler
May 14	31°N. 13°W. N of Canary Is.	1 Spotted Flycatcher (<i>Muscicapa striata</i>), 1 Yellow Wagtail, 2 Swallows, 2 Swifts, 1 Sand Martin, 3 Turtle Doves	J.O.B.	
May 10-18	34°, 8°W. to 36°N. 7°W. Casablanca	Daily:—Turtle Doves, House Martins and Swallows about the ship	G.S.R.	
May 17	47°42'N. 15°30'W. 400m. WSW Land's End	1 Cattle Egret (<i>Ardeola ibis</i>), 1 Peregrine Falcon (<i>Falco peregrinus</i>), several Swallows	W.G.	Detailed description of probable Cattle Egret and Peregrine
May 29	37°30'N. 12°W. W of Cape St. Vincent	2 Swifts	J.O.B.	On board. Died

Jun 6	36°N, 6°49'W. S of Cadiz	1 Woodchat Shrike (<i>Lanius senator</i>)	G.S.R.	On board. Photographed
Jun 10	46°N, 9°W, 200m. N of Corunna	3 Turtle Doves, 2 Swallows	J.O.B.	
Jun 21	37°15'N, 11°45'W, 100m. W of Cape St. Vincent	1 Swift 1 House Martin	J.O.B. J.O.B.	Ringed N10 A458 Ringed N10 A459
July 30	Off Cape St. Vincent	1 Fan-tailed Warbler (<i>Cisticola juncidis</i>)	E.F.A.	
Aug 17	49°36'N, 14°54'W, 300m. SW of Ireland	1 Pied Wagtail, 1 Turnstone (<i>Arenaria interpres</i>) d.ENE	S.E.C.	
Aug 31	40°N, 9°37'W, 30m. W of Portugal	2 Spotted Flycatchers, 6 Turtle Doves, 1 Willow Warbler, 1 Common Sandpiper	P.P.O.H.	
Sep 1	46°N, 8°15'W.	8 Turtle Doves, 2 Swallows	P.P.O.H.	
Sep 2	Approaches St. Georges Channel	1 Pied Flycatcher (Female)	P.P.O.H.	
Sep 7	44°10'N, 8°58'W. off Cape Finisterre	1 Common Sandpiper, 2 Turtle Doves, 1 Swallow, 1 Yellow Wagtail	P.P.O.H.	
Sep 21	45°33'N, 12°25'W, 200m. from NW Spain	1 Redstart (<i>Phoenicurus phoenicurus</i>) d.E.	S.E.C.	Landed on board
Apr 16	28°N, 13°45'W, Canary Is.	2 Turtle Doves (<i>Streptopelia turtur</i>)	J.O.B.	
Apr 23	6°30'N, 11°15'W, off Monrovia	1 Swift (<i>Apus apus</i>) d. NW.	J.O.B.	
Apr 24	8°45'N, 15°W, off Freetown	2 Swallows (<i>Hirundo rustica</i>)	J.O.B.	
Apr 25	12°N, 17°15'W, off Bathurst	1 Swallow	J.O.B.	
Apr 26	16°30'N, 17°45'W, NW Cape Verde	1 Swallow	J.O.B.	
Apr 27	20°45'N, 17°45'W, off Cape Blanc, Spanish Sahara	1 Whitethroat (<i>Sylvia communis</i>), 1 plus Turtle Doves, 1 House Martin (<i>Delichon urbica</i>)	J.O.B.	
Apr 29	28°30'N, 15°W, Canary Is.	2 Yellow Wagtails (<i>Motacilla flava</i>) d. N., 1 "Phyllosco- pus" Warbler	J.O.B.	
May 15	26°30'N, 15°W. S of Canary Is.	1 Redstart (<i>P. phoenicurus</i>), 1 Spotted Flycatcher (<i>Muscicapa striata</i>), 3 Turtle Doves, 3 plus Swallows	J.O.B.	

LAND BIRDS AT SEA

WESTERN NORTH ATLANTIC—WEST OF 30°W AND NORTH OF 30°N

From records of: Capt. R. Walgate, s.s. Empress of England. Capt. A. J. F. Colquhoun, M.V. Sidonia. 3rd Officer S. E. Chapman, M.V. Cienfuegos.

DATE	POSITION	SPECIES 1964	OBSERVER	REMARKS
Aug 7	30°57'N, 77°52'W. 200m. E Coast of Georgia	1 Barn Swallow (<i>Hirundo rustica</i>)	S.E.C.	
Aug 9	36°58'N, 68°W. 400m. E of Virginia	1 Cedar Waxwing (<i>Bombicilla cedrorum</i>)	S.E.C.	On board
Aug 10	38°49'N, 61°45'W. 400m. SSE Cape Sable	1 Northern Water Thrush (<i>Seiurus noveboracensis</i>)	S.E.C.	On board
Aug 14	56°17'N, 32°34'W. Mid Atlantic 800m. W of Ireland	5 Turnstones (<i>Arenaria interpres</i>) 1 Chaffinch	R.W.	Turnstones on board 3 days. Ate breadcrumbs and chopped fish. Drank rain water. One captured and examined and released in St. Lawrence River 45 miles below Quebec. Chaffinch perhaps on board since leaving U.K.
Aug 15	53°55'N, 48°16'W. (arrival position uncertain)	1 Ringed Plover (<i>Charadrius hiaticula</i>)	R.W.	Picked up dead. Examined. Presented to Redpath Museum.
Aug 16	Gulf of St. Lawrence	1 Northern Water Thrush (<i>Seiurus noveboracensis</i>)	R.W.	Died on board. Examined. Presented to Redpath Museum.
Sep 13	55°30'N, 40°W. 400m. S of Cape Farewell, Greenland	2 Wheatear (<i>Oenanthe oenanthe</i>) d. SW.	R.W.	On board 6 hours. 1 male and 1 female. Male examined. Ate breadcrumbs.
Sep 26	53°21'N, 50°13'W. 205m. ENE of Belle Island.	1 Magnolia Warbler (<i>Dendroica magnolia</i>)	R.W.	On board one day but died. Examined. Presented to Redpath Museum.
Sep 27	Gulf of St. Lawrence. N of Anticosti I.	1 Northern Water Thrush		
Sep 26	40°13'N, 71°13'W. off Nantucket I.	2 Brown Thrasher (<i>Toxostoma rufum</i>), 1 Catbird (<i>Dumetella carolinensis</i>), 1 Mourning Dove (<i>Zenaidura macroura</i>)	A.J.F.C.	After 3 days only one remained and died two days later.

Sep 26	30°26'N. 42°38'W. Mid Atlantic	1 American Redstart (<i>Setophaga ruticilla</i>)	S.E.C.	Examined in hand.
Sep 26	53°21'N. 50°13'W. 205m. ENE of Belle I.	5 American Redstarts (<i>Setophaga ruticilla</i>)	R.W.	On board for 1 hour.
Oct 3	Gulf of St. Lawrence. N of Anticoste I.	1 American Pipit (<i>Anthus spinoletta</i>) 1 Short-eared Owl (<i>Asio flammeus</i>)	R.W.	On board.
Oct 6	56°N. 31°31'W. Mid Atlantic 450m. SE of Cape Farewell	1 Yellow-throated Vireo (<i>Vireo flavifrons</i>) 1 Olivebacked Thrush (<i>Hylorichla ustulata</i>)	R.W.	Died after one day. Examined. Sent to Bird Section British Museum (Nat. Hist). May have come on board soon after ship left Canada.

LAND BIRDS AT SEA

WESTERN NORTH ATLANTIC—WEST OF 30°W AND SOUTH OF 30°N

From records of: 3rd Officer S. E. Chapman, m.v. Cienfuegos. J. E. Worgan, H.M.T.S. Monarch. Capt. H. C. R. Dell, m.v. Hereford.

DATE	POSITION	SPECIES 1964	OBSERVER	REMARKS
Apr 21	13°15'N. 75°03'W. Caribbean Sea	1 Osprey (<i>Pandion haliaetus</i>) d. N.	S.E.C.	
Aug 11	10°13'N. 78°56'W. Panama area	1 Cliff Swallow (<i>Perochelidon pyrrhonota</i>)	J.G.W.	On board.
Sep 11	11°47'N. 74°12'W. Caribbean Sea	Several Sealy-breasted Thrasher (<i>Allenia fusca</i>)	H.C.R.D.	Several on board. Ate apple, nuts and biscuit. Probably carried south by bad weather in the Antilles
Sep 28	25°21'N. 51°59'W. 1000m. SE Bermuda	1 Black-throated Green Warbler (<i>Dendroica virens</i>)	S.E.C.	Caught and examined on board.
Oct 1	16°36'N. 66°47'W. Caribbean Sea	1 Dowitcher (<i>Limnodromus griseus</i>) d. E.	S.E.C.	

LAND BIRDS AT SEA

RED SEA

From records of: 3rd Officer the Hon. J. D. Simon, s.s. Nyanza. Capt. P. P. O. Harrison, s.s. Kent. Chief Engineer L. J. Macinnes, s.s. Otina. Capt. R. Bullock-Webster, m.v. Cannanore. Capt. A. J. Hawkins, m.v. Port Launceston. N. G. Cheshire, m.v. British Cygnet. Lt. M. B. Casement, R.N., H.M.S. Centaur.

DATE	POSITION	SPECIES 1963	OBSERVER	REMARKS
May 7	13°15'N, 42°15'E Near Perinc I.	1 Angola Kingfisher (<i>Haleyon senegalensis</i>)	M.B.C.	
Sep 2	17°33'N, 40°32'E.	2 Turtle Doves (<i>Streptopelia turtur</i>)	J.D.S.	On board.
Sep 19	16°24'N, 41°06'E.	1 Turtle Dove	N.G.C.	On board.
Oct 11	26°49'N, 34°32'E.	2 Hoopoe (<i>Upupa epops</i>), 3 House Martins	P.P.O.H.	On board.
Oct 12	21°11'N, 38°14'E.	2 Short-eared Owls (<i>Asio otus</i>), 3 House Martins, 1 Turtle Dove.	P.P.O.H.	Both owls on board.
Oct 18	21°06'N, 38°12'E.	1 Stone Curlew (<i>Burhinus oedicnemus</i>)	J.D.S.	
Oct 26	19°N, 38°35'E.	1 Black Kite	P.P.O.H.	
Nov 26	16°14'N, 41°19'E.	1 Grey Wagtail (<i>Motacilla cinerea</i>)	P.P.O.H.	
1964				
Feb 18	20°22'N, 38°47'E.	1 Saker Falcon (<i>Falco cherrug</i>)	L.J.M.	On board 4 hours.
Apr 29	Off Perim I.	1 Grey-hooded Kingfisher (<i>Haleyon pallidiventris</i>)	A.J.H.	On board, detailed sketch.
Aug 20	18°32'N, 39°52'E.	1 Swift	P.P.O.H.	
Sep 18-20	Southern Red Sea	1 Hoopoe, 2 Wheatears, 2 Red-backed Shrikes, Many Swallows, several Turtle Doves	P.P.O.H.	

LAND BIRDS AT SEA

GULF OF ADEN—ARABIAN SEA—INDIAN OCEAN

From records of: N. G. Cheshire, m.v. British Cygnet. Capt. P. P. O. Harrison, s.s. Kent. Capt. A. J. Hawkins, m.v. Port Launceston. Lt. M. B. Casement, R.N., H.M.S. Centaur.

DATE	POSITION	SPECIES 1963	OBSERVER	REMARKS
Mar 22	12°06'N, 45°42'E, Gulf of Aden	1 Hoopoe (<i>Upupa epops</i>), 1 Swallow (<i>Hirundo rustica</i>)	M.B.C.	On board.
May 1	12°N, 45°E, Gulf of Aden	1 Corncrake (<i>Crex crex</i>)	M.B.C.	On board.
Sep 14	26°19'N, 55°26'E, Str of Hormus	1 Peregrine Falcon (<i>Falco peregrinus</i>) d. S.	N.G.C.	
Sep 15	22°14'N, 59°50'E, G. of Oman	1 Egyptian Nightjar (<i>Caprimulgus aegyptius</i>)	N.G.C.	
Sep 17	14°53'N, 51°08'E, off Aden Protectorate	1 Egyptian Nightjar	N.G.C.	On board.
Oct 24	14°28'N, 50°30'E, off Aden Protectorate	1 Swallow	P.P.O.H.	
Nov 8	10°47'N, 51°32'E	1 Quail	N.G.C.	On board.
Nov 11	03°35'S, 40°15'E, off Mombasa	1 Swallow d. S.	N.G.C.	
Nov 14	10°50'S, 47°09'E, 100m, SW Aldabra	1 Whimbrel (<i>Numenius phaeopus</i>)	N.G.C.	
Dec 9	12°06'N, 50°40'E, N of Cape Guardafui	1 Hoopoe (<i>Upupa epops</i>)	A.J.H.	
1964				
Aug 13	29°06'N, 48°12'E, N end Persian Gulf	1 Hoopoe, 1 Pratincole (<i>Glarola pratincola</i>)	P.P.O.H.	Pratincole on board drinking water. Detailed sketch.
Aug 18	13°08'N, 46°48'E, Gulf of Aden	1 Swift	P.P.O.H.	
Sep 22-23	14°58'N, 51°20'E, off Aden Protectorate to 17°N, 56°E	3 Yellow Wagtails, 2 Turtle Doves, 1 Short-eared Owl (<i>Asio flammeus</i>)	P.P.O.H.	
Sep 24	24°30'N, 53°16'E, Gulf of Oman	2 Yellow Wagtails, 2 Turtle Doves	P.P.O.H.	

LAND BIRDS AT SEA
MEDITERRANEAN SEA—SELECTED EXTRACTS

From records of: Lt. M. B. Casement, R.N. H.M.S. Centaur. N. G. Cheshire, M.V. British Cygnet. Capt. P. P. O. Harrison, s.s. Kent. Chief Engineer L. J. Macinnes, s.s. Otina. Capt. W. N. H. Jarvis, s.s. Orlando.

DATE	POSITION	SPECIES 1963	OBSERVER	REMARKS
May 12	33°15'N, 26°10'E.	1 River Warbler (<i>Locustella fluviatilis</i>)	M.B.C.	Found inside cockpit of helicopter. Examined in hand.
Sep 20	36°15'N, 16°05'E.	1 Little Egret (<i>Egretta garzetta</i>)	P.P.O.H.	On board.
Sep 23	32°42'N, 28°07'E.	1 Spotted Crake (<i>Porzana porzana</i>) d. S.	N.G.C.	Examined in hand.
Sep 24	34°32'N, 21°06'E.	1 Glossy Ibis (<i>Plegadis falcinellus</i>) d. S.	N.G.C.	
Oct 30	36°57'N, 11°38'E.	7 Cranes (<i>Megalamis grus</i>) d. SSW. Many flocks of small Passerines d. SSW.	N.G.C.	All flying low over sea all morning, wind W.N.W. force 3.
Nov 12	36°42'N, 14°31'E.	1 Saker Falcon (<i>Falco cherrug</i>)	L.J.M.	On board 2 hours.
Nov 18	36°19'N, 21°25'E.	1 Squacco Heron (<i>Ardeola ralloides</i>) d.S.	L.J.M.	Flying round ship.
		1 Saker Falcon	L.J.M.	On board 4 hours.
1964				
May 7	120m. E of Malta	1 Golden Oriole (<i>Oriolus oriolus</i>)	W.N.H.J.	On board.
May 22	34°29'N, 29°56'E.	6 Bee Eaters (<i>Merops apiaster</i>)	L.J.M.	On board all day.
Aug 24	33°09'N, 34°45'E.	1 Great Spotted Cuckoo (<i>Clamator glandarius</i>)	P.P.O.H.	On board.
Aug 25	34°02'N, 31°07'E.	50 plus Purple Herons (<i>Ardea purpurea</i>) d. S.	P.P.O.H.	Passing through U.S. 6th Fleet at sea.
Oct 11	34°35'N, 27°24'E.	1 Corncrake (<i>Crex crex</i>)	P.P.O.H.	On board.



TURTLE DOVE

A common ship visitor.

Photo: H.M.S. Vidal.

Note: The distinctive black and white patch on side of neck is clearly visible.

CRUISE OF R.R.S. DISCOVERY IN THE INDIAN OCEAN

By R. S. BAILEY, British Ornithologist with expedition.

During 1964 The Royal Research Ship Discovery was working in the Indian Ocean to complete her part in the International Indian Ocean Expedition. A brief summary of the ornithological work during 1963 was published in the *Ibis* in January 1964. (*Ibis*, 196: no. 1.) The work was divided into three cruises, the first two of which were surveys along 58° east and 68° east meridians as far south as 20° south. The last was a survey of the Somali Current. The routine work included current measuring and the analysis of seawater to determine its salinity, temperature and the oxygen, nitrate and phosphate contents. Quantitative net hauls were made down to one thousand metres and the density of chlorophyll present in the plankton was measured in the surface layers.

I attempted to estimate bird numbers by counting for at least an hour four times a day. Many factors make it difficult to compare these counts, but they probably give a good indication of the changes in density over the ocean. It is extremely difficult to sample the food available to seabirds directly, but an attempt was made using a surface plankton net towed at five knots. The catches taken with this net give some idea of how productive the sea is and, when they have been analysed, it may be possible to determine some of the ecological factors which affect the distribution of seabirds.

Our first destination after leaving Aden at the beginning of March, the tail end of the N.E. Monsoon, was the Kuria Muria Islands. In July 1963, at the height of the S.W. Monsoon season we had spent several weeks in the upwelling area off the Arabian coast and many species of birds were concentrated around these islands, suggesting that they are an important breeding station. Unfortunately conditions in July were too rough to attempt landing, but in March this year we were able to land on Hasikiya, the westernmost island. Hasikiya was the most desolate island I have ever encountered. Only one species of land plant was found growing, and rats were apparently the only mammals. Only one true land bird was seen—a Peregrine which probably subsisted on the rats. The island was deserted by most of the seabirds seen in the surrounding seas during the south-west monsoon and only the Blue-faced Booby was nesting. It had just begun laying and, while several thousand birds were seen, only about fifty nest scrapes contained eggs. The only other seabirds on the island were a few Socotra Cormorants, which suggests that the huge numbers of this species that I saw in Kuria Muria Bay in 1963 were migrants from the Persian Gulf.

Our visit to the Arabian coast showed the profound effect of the seasonal changes on the bird community. The seas off Arabia in March were warm and few birds were seen. Only Jouanin's Petrels and Blue-faced Boobies were common, but a few Red-billed Tropic-birds, Lesser Black-backed Gulls and phalaropes were also seen. Upwelling was no longer progressing, so the water was poor in plankton and fish and, as a result, was presumably unable to support the huge populations of birds. Even Arabian Sea resident species, such as the Persian Shearwater, the Socotra Cormorant, the Brown-winged Tern and Hemprich's Gull had disappeared, perhaps to find upwelling areas in other parts of the Arabian Sea.

It was not to find boobies that I had visited the island, however. I wanted to search for evidence of breeding petrels, especially Jouanin's

Petrel and the Persian Shearwater. The only signs of suitable nest sites were shallow burrows and crevices in the steep-sided gullies which serve as water courses at certain times of year. Some of these burrows contained small piles of feathers and bones which may provide evidence of the species which nest on the island, when they have been identified. Conclusive evidence, however, must wait until an expedition can visit the island during the breeding season.

The first longitudinal survey was carried out in March and April. The main aim was to study the system of equatorial currents before the beginning of the south-west monsoon. At the boundaries of these currents with the counter-current there is a tendency for the water layers to mix bringing nutrient salts to the surface. This results in an increase in productivity and consequently one might expect to find seabirds there in large numbers.

The distribution of oceanic birds was so patchy that it is difficult to make generalisations at this stage. None of the species were evenly spread along the transects, and both the Arabian Sea and the zone between 8° south and 13° south seemed especially unfavourable. This may be connected with the greater distance from breeding colonies, but I believe that the productivity of the sea is more important. The richest areas were those just south of the equator and again south of 15° south. This suggests that the boundaries between the equatorial currents may be richer than the surrounding seas. When the biological material has been worked up it will be possible to analyse this more thoroughly.

On our way south Wedge-tailed Shearwaters increased suddenly at 4° south at a convergence marked by a drop in sea temperature and the presence of Sargassum weed. Two species of all-black storm-petrels were seen. A Swinhoe's Storm-petrel came aboard at 7° north, but the other species remains a mystery. It was probably Matsudaira's Storm-petrel and was commoner than the smaller Swinhoe's Storm-petrel. In March both species were rare in the equatorial region. They probably spread along the rich boundaries of the equatorial currents from the Pacific Ocean during their non-breeding season.

The commonest bird at sea, however, was the Sooty Tern, and flocks of fifty to a hundred were seen almost everywhere. Along 58° east it was concentrated in three zones: $10-12^{\circ}$ north, 5° north and $17-20^{\circ}$ south, whereas in 68° east it was less common and more scattered. Sometimes flocks of Sooty Terns were accompanied by Frigate-birds, but these are difficult to identify at any distance. White-tailed Tropic-birds and Blue-faced Boobies were also occasionally seen at sea but no obvious concentrations were recorded. The other tropical seabirds, such as noddies, Audubon's Shearwaters, White and Brown-winged Terns, were very rarely recorded more than fifty miles from their breeding islands. By April a few Wilson's Storm-petrels and Great Skuas had reached the area south of the equator.

On leaving Cochin in mid May we made for the Arabian coast to begin the second longitudinal survey. In the Arabian Sea at the beginning of the S.W. Monsoon a gradual build-up in numbers had begun to take place. Upwelling had just started close to the Arabian coast and small numbers of Persian Shearwaters, Hemprich's Gulls and Crested Terns were seen around the Kuria Muria Islands, as well as small numbers of Pale-footed Shearwaters and Wilson's Storm-petrels from the south. Jouanin's Petrels and Red-billed Tropic-birds had also begun to concentrate near the coast.



SWINHOE'S STORM-PETREL

Indian Ocean

Photo: R. S. Bailey.

In the Arabian Sea and to the south of the Laccadives, Pale-footed Shearwaters and White-faced Storm petrels were seen moving north-west. By the end of May numbers of White-faced and Black-bellied Storm-petrels had appeared in the central Arabian Sea, but I was unable to confirm any records of White-bellied Storm-petrels. All I saw clearly had the black belly stripe. Few other birds were seen but Jouanin's Petrels extended south to the equator in small numbers.

The second longitudinal survey gave me the opportunity to record changes in distribution which had occurred since the onset of the monsoon. The most obvious difference was the presence of Southern hemisphere migrants but there had been some changes in the distribution of resident species. There was some evidence that Wedge-tailed Shearwaters had spread north into the Arabian Sea. By June, the larger all-black storm-petrels had become much commoner in the area of calms on the equator. During both surveys they were concentrated in this zone. It is not easy to suggest why it should become more common in the south-west monsoon if one assumes that it breeds in the Pacific Ocean at this time of year. The birds in the Indian Ocean must belong to a non-breeding population unless they breed in the northern winter in an undiscovered area.

Blue-faced Boobies and White-tailed Tropic-birds were again seen scattered at sea, but the only concentration of note was of the latter around Mauritius in July. A few Red-tailed Tropic-birds were also seen south of 15° south. Frigate-birds had shown a tendency to spread north but, with the exception of Sooty Terns, the distribution of most tropical species showed no significant changes. By late May Sooty Terns had disappeared from the central Arabian Sea and were not seen north of 8° north. They had presumably moved south towards their breeding islands. In July large numbers were seen moving south-east after heavy winds in the area between Mauritius and the Seychelles. It is quite certain that their movements are extremely complex and are probably associated with differences in breeding season in different parts of the ocean.

Few of the antarctic migrants were seen south of the Arabian Sea. Only during their migration are they seen in the equatorial zone. In June, for instance, small parties of Wilson's and Black-bellied Storm-petrels were seen feeding close to the equator, where the more productive areas may serve as transit feeding grounds. A few other southern hemisphere migrants reach the tropics in small numbers. On several occasions I saw black and white gad-fly petrels. Some may have been Trinidade Petrels, but others were almost certainly Soft-plumaged Petrels, recognised by their dark underwing. Prions were also widespread between 13° and 20° south. Finally, I recorded a probable Giant Petrel off north Madagascar in July.

We had intended to land on one of the islands to the north of Madagascar, but this proved impossible owing to rough seas. While passing close to Farquar atoll, Astove and Cosmoledo, I was able to record the species moving to and from the islands. Off Farquhar, Sooty Terns were extremely common with small numbers of Common Noddies, Crested Terns and Red-footed Boobies. Off Astove few birds were seen, suggesting that there are no important breeding colonies there at that time of year. At dusk while passing Cosmoledo, large numbers of Sooty Terns and Red-footed Boobies were seen moving towards the islands.

In August we made two short trips to the Somali coast south of Cape Gardafui. The strong monsoon winds create a fast-moving current running up the African coast and, as the water moves north, its course gradually veers away from the coastline. Water upwells to fill the gap and, from

about 8° north to Cape Gardafui, there is a huge wedge of cold water which is rich in nutrient salts. As in other upwelling areas I expected to find large concentrations of birds but, compared with the Arabian coast upwelling area, there were remarkably few.

The warm Somali current further south was also poor for birds. Near the coast a few Jouanin's Petrels, Wilson's Storm-petrels and Little Terns were seen while, further out in the Arabian Sea, Sooty Terns and Black-bellied Storm-petrels appeared, with small numbers of Wedge-tailed Shearwaters and the larger all-black storm petrels. As soon as we entered the area of cold water there was a small but marked increase in numbers and the species composition changed completely. Persian Shearwaters, Wilson's Storm-petrels and Red-billed Tropic-birds became widespread, but very few other birds were seen. Another sudden change occurred passing from the cold water into the hot Gulf of Aden water. Dolphins played round the ship's bows and Wilson's Storm-petrels and Jouanin's Petrels became common.

It is very difficult to suggest why this upwelling area should be so poor in birds. A clue is given, however, by the fact that the cold water was extremely rich in plant plankton but only moderately rich in the planktonic animals which graze it. This suggests that large communities of fish, upon which birds can feed, had not had time to develop. This may happen when the water has drifted further east off Socotra. As our survey had to be restricted to the centre of the upwelling, centred on Ras Hafun and Ras Mabber, it was impossible to investigate this possibility.

In addition to my census work I was also interested in the food of seabirds. Of the seventeen which landed on board, some regurgitated their stomach contents which usually consist of remains of flying fish or squid. Among those which definitely feed on squid are Jouanin's Petrel, Pale-footed and Wedge-tailed Shearwater, all three species of booby, Greater Frigate-bird and Sooty Tern—all the common oceanic birds of the tropical Indian Ocean, in fact. The species of squid most frequently found is thought to come to the surface only at night. This is one more piece of evidence that many species of seabirds feed at night.

During the coming year, I shall be writing up this work at the Edward Grey Institute of Field Ornithology. I hope to reach some conclusions about the environmental factors which restrict the distribution of different species of seabirds; the plankton changes markedly from place to place in quantity and type, and I hope to find relationships between these changes and bird distribution.

I owe my thanks to a large number of people for their help and advice. When reading up the background to Indian Ocean ornithology I found the sea reports of the R.N.B.W.S. most helpful. The 1964 cruise was run by the National Institute of Oceanography, to whom I am most grateful for such an opportunity to study oceanic birds. I have also had a great deal of help from the officers and crew of the *Discovery* and my grant has very kindly been given by the Nuffield Foundation.

BIRDS SEEN DURING WEST TO EAST TRANS-PACIFIC
CROSSING ALONG EQUATORIAL COUNTER-CURRENT
AROUND LATITUDE 7°N. IN THE AUTUMN OF 1960.

By Captain W. F. J. Mörzer Bruyns, M.S. Neder Ryn

[Captain W. F. J. Mörzer Bruyns is one of the great personalities of marine ornithology. Brother of one of the leading conservationists of the Netherlands, he has kept to the family profession, and sails rapidly around the world in one of the larger vessels of the Dutch merchant navy, recording every bird that passes at sea. For many years some of us have been privileged from time to time to receive meticulously detailed charts of his observations, illustrated in many colours, and backed up by massive analyses of their significance. Unfortunately, he has little time to polish up all this work for publication, and except for one joint paper with his brother on Phalaropes in the Arabian Sea (*Ardea* 45:72-84) he has so far published very little. We are therefore extremely grateful to him for allowing us to condense one of his more characteristic pieces, covering the little-studied concentration of seabirds along the boundaries of the Pacific equatorial counter-current, and the great transequatorial shearwater migrations through this area. He is responsible for the identifications.]

In the subtropical parts of the Pacific the surface waters move west before the prevailing easterly trade-winds to pile up on the western sides of that ocean. Part of this water flows north and south into higher latitudes past Japan and Australia, and part flows back east from the region north of the Moluccas in a narrow stream of warm water lying between 6° and 8°N. known as the Equatorial Counter-current. This is the choice sea-lane for ships proceeding from the Indies to the Panama Canal because it shortens their voyage by one or two days, and as it turns out the same region is also greatly favoured by seabirds from both north and south Pacific, at least during the months of October and November.

The winds over this "lane" during this season can be roughly divided into three groups. In the west the NE and SE trades just about neutralise each other, and from Palau to the Marshall Islands occurs a region of calms with very high sea temperatures of about 29°C. From the Marshalls to about the longitude of Los Angeles at 120°W. the NE and SE trade-winds combine in an easterly wind which is sometimes quite strong and squally. To the east of 120°W. the trade-winds neutralise each other again to give calms and variable winds, mainly from the south, so that the weather remains squally or showery until the vicinity of the Galapagos, and then becomes beautiful to Panama. The water temperature gradually falls from 28½°C. to 27°C. between the Marshalls and 120°W., and then remains at about 26-27°C. to Panama.

Although the greater part of the tropical seas are largely devoid of bird life, along this track we met a host of birds, sufficient to supply us with one surprise after another almost daily for three weeks. We recorded no less than 41 species, including two landbirds, without counting the offshore species in Balboa Roads. I originally recorded these in the way which I use for seabirds all over the world, by plotting them on charts where each day's travel covers about three inches. Each group of species has its own chart, and each species is recorded on the chart in a distinct colour, with a number by each record to show how many were seen. This provides a simple and effective way of first plotting the records, and then

analysing their relative position with regard to land and islands, winds and currents, in a way impossible with a written record. I will merely summarise the positions at which we saw the birds and the numbers recorded for each species here; only the coordinates for longitude are given since except where otherwise stated we were always within a degree of 7°N.

ALBATROSSES: *Diomedelidae*

Waved Albatross *Diomedea irrorata*. Single birds resembling albatrosses were seen at 6½°N. 118° and 110½°W. on 11 and 13 Nov.

PETRELS: *Procellariidae*

White-faced Shearwater *Puffinus leucomelas*. This bird, which breeds in the vicinity of Japan, winters in great numbers along the north coast of New Guinea. In January I have seen 10,000 to 20,000 in a day here, never far from the hundred fathom line. A few stay west of the Philippines to winter on the north coast of Borneo, while an appreciable number migrate through the Sulu Sea to reach their winter quarters off New Guinea via Sangir Id. and the Moluccas.

On 20-21 October we saw four in the China Sea, but on 23-26 Oct. they were absent from the Philippines. They were present all day in groups of two to five between Palao and Surigao Strait on 27 October, with at least 200 at 9°N. 131°E. All were steadily flying SSE across the NE trade wind in the direction of New Guinea. Three more were flying SE at Palao on 28 Oct., and groups of up to fifty were seen flying SSE again at 142°E. on 29 Oct. The last was seen at 149°E. over Helene Shoal on 30 Oct., and this seems to have been the outer edge of the migration route. The migration seemed very purposeful, with no wandering about.

Wedge-tailed Shearwater *Puffinus pacificus*. The very long tail makes this species fairly easy to distinguish from other shearwaters. I have divided them into two groups for recording purposes, uniformly brown ones from the south, and brown and white ones from the north.

The dark phase was first seen all day in numbers up to ten at 141°E. on 29 Oct. Up to six were visible all the time at Helene Shoal (150°E.) next day, and one at Ngatik Id. (157°E.) the day after. One was seen in the morning and five in the afternoon north of Kusai on 1 Nov., and ten with one or two for the rest of the day at Ialnit Atoll on 2 Nov. Two groups of 200 were seen with Flesh-footed Shearwaters, Gould's Petrels, terns and storm-petrels over enormous shoals of fish at 179°E. on 3 Nov., and one in both the morning and afternoon at 175°W. the next day (meridian day). Two were seen singly at 166°W. on 4 Nov., and then none until three at 146°W. on 7 Nov. A hundred were seen at noon, with one or two all the afternoon and ten at 4 p.m. North of the Marquesas in the region most distant from land at 138°W. on 8 Nov. Two to five were seen all day together with pale birds at 131°W. on 9 Nov., one at 123°W. on 10 Nov., then one with three pale birds at 109°W. north of Cocos Id. on 12 Nov. One was seen morning and evening at 101°W. on 13 Nov., and two singly in the morning with 10-20 continuously mixed with an equal number of pale birds in the afternoon at 93°W. north of the Galapagos on 14 Nov.

The first definite flock of six pale birds was seen at 152°W. on 6 Nov., with single birds at 137° and 131°W. on 8 and 9 Nov., one and then two at 109°W. on 12 Nov., and 10-20 with dark birds in four hours of the afternoon at 93°W. north of the Galapagos on 14 Nov.

The records make it clear that the two forms do not mix much, the pale one being scarcer. I had the impression that they belonged to the equatorial currents on each side and only strayed over the counter-current. During the two days with most mixing there was a strong cross-component in the current, on 9 Nov. southerly, on 14 Nov. northerly. I have not yet made a crossing to the south, but the pale bird is in evidence across the whole sea area between Formosa and Hawaii to the north. The recordings show that they easily reach the maximum possible distance away from land, up to 2,000 miles from the nearest breeding grounds.

When they sail over the swell in a flat calm, the lower wing regularly touches the water, leaving a faint wake.

Pale-footed Shearwater *Puffinus carneipes*. This bird should already have reached the breeding grounds by the time of this crossing, which may explain why so few were seen. Three were flying south at Jaluit Atoll (171°E.) on 2 Nov., two flying south at 180°E. on 3 Nov., two were seen with Wedge-tailed and Grey-backed Shearwaters at 132°W. on 9 Nov., six in twos at 116°W. on 11 Nov., and three possible birds flying SE with Pink-footed Shearwaters at 93°W. on 14 Nov.

Sooty Shearwater *Puffinus griseus*. This species should also have been at its breeding grounds in October. A possible bird was seen flying south on the edge of a faster stream of Short-tailed Shearwaters at 166°W. on 4 Nov., two were flying roughly SE at 129°W. on 9 Nov., one and then two were seen at 117°W. on the morning of 11 Nov., and ten flew SE with Pink-footed Shearwaters at 93°W. on 14 Nov.

Short-tailed Shearwater *Puffinus tenuirostris*. This was one of the star performers of the voyage. They came fast and thick between 176° and 173°W. on the 3 Nov. (meridian day), flying high for a shearwater, at six to thirty feet, and with great speed, about 40-50 kts., zigzagging on a course lying between 190-200°. Flocks of up to fifty crossed our bows every 5-6 minutes, or every 1½ miles, sometimes in groups, and I calculated that during daylight this day we saw up to 400,000 birds. Single birds had been seen the preceding day at 178°E., and groups of two to eight, and sometimes up to forty, passed us between 168-166°W. the next day. At this rate about a million birds must pass through the funnel at 175°W. running south over Howland and Baker islands and Fii, or perhaps two million over the whole area between 178°E. and 166°W. daily while the passage lasts.

This position, course and rate of passage indicate that the birds must fly direct from their winter quarters in Alaska to their breeding places in Australia and Tasmania, the whole population passing through the tropics in a matter of days. They never rested on the water or stopped to search for food while we watched them, and continued flying as long as the light permitted us to see them; I received the impression they also continued at night as well.

Grey-backed Shearwater *Puffinus bulleri*. This is the best glider of all. At the eastern end of its migration route it was not always easy to distinguish it from the White-necked Petrel at any distance, in spite of its difference in size and flight pattern. The distinctive inverted "W" markings on the back and wings are sometimes shared by that species, which in turn is even more difficult to tell from the Hawaiian Petrel.

The first was seen at 176°W. on 3 Nov. (meridian day), with two at 166°W. the next evening. One was seen in the morning and three in the afternoon at 159°W., NE of Palmyra Id., on 5 Nov., and then there were none for two days. Then some nine groups of up to forty were seen daily

between 138°W on 8 Nov. and 123°W. on 10 Nov., mixed with White-necked Petrels and perhaps also Hawaiian Petrels among other species.

Pink-footed Shearwater *Puffinus creatopus*. These were seen in groups of 20-40 on 14 Nov. between 93-92°W., on the direct route from the coast of California to Peru. The fact that no petrels were seen east of this point suggests that those migrating between North and South America must fly across the sea instead of following the coast of central America across the tropics.

Christmas Shearwater *Puffinus nativitatis*. This resembles the Wedge-tailed shearwater, but is more chestnut in coloration with only half the length of tail. They were only seen between 162-157°W. due north of the Christmas Island chain on 5 Nov., where they occurred in rafts of up to thirty within a hundred miles of land, and in ones and twos to their ultimate range 250 miles from land. None were seen at all on a recent crossing north of Marcus Island and the Hawaiian group.

Audubon's Shearwater *Puffinus Lherminieri*. We only saw these within ten miles of the Palau Is. on 28 October, although we also passed close to several islands in the Carolines and Marshall to search for terns and shearwaters as well.

Manx or Townsend's Shearwater *Puffinus puffinus*. Black and white shearwaters seen in groups of up to three in the afternoon 300 miles west of Kingman's Reef at 122°W. on 4 November and at 122°W. on 10 November, and also possibly three in a shower at 116°W. next day, differed from the last, and resemble the local race of Manx Shearwater *P. p. newelli* which I have seen at Hawaii to the north. The flight was better, with 50-80 per cent. sailings, banking at angles to the horizon of 30° or more, and rising up to 15ft. above the water. The wingbeats, though not actually counted, were about the same frequency, 250/min. The back seemed blue-black on a cloudy day, and the white of the vent extended round the side of the body almost to the upper tail coverts, so that the bird appeared to have a white patch on each side of the tail.

Bulwer's Petrel *Bulweria bulwerii*. I have seen this small petrel between 150 and 240 miles from land, although the larger species Jouanin's Petrel *Bulweria fallax* which replaces it in the Indian Ocean ranges up to 500 miles from land. The latter, in common with many seabirds of the Indian Ocean, seems to have a sort of migration back and forth with the NE and SW monsoons. In the Pacific Bulwer's Petrel has four marked breeding areas, off China and in the Bonins and Hawaii groups in the north, and in the Marquesas in the south. This crossing produced several records in two widely separated localities lying between the latitudes of these breeding places, some in the equatorial west Pacific, the others in the east central Pacific, as if this species also may move away from the breeding grounds in the off-season. The first was seen east of Helene Shoal at 152°E. on 30 Oct., with four at noon and one later near Ngatik Id. at 157°E. next day, and the last of the western ones south of Jaluit Atoll at 169°E. on 2 Nov. The two eastern birds, which were noticed to have pale alar bars on the wing, were seen at 166° and 161°W. on 7 and 8 Nov.

Cook's and Gould's Petrels *Pterodroma cookii* and *P. leucoptera*. These two birds look very much alike, so that some experts consider they should be regarded as one species. They are difficult to tell apart at sea, and my records are based on the characters quoted by W. B. Alexander in his "Birds of the Ocean" (which I have always found good), who says *P.*

leucoptera appears a dark bird in flight with no clear distinguishing markings above, while *P. cookii* appears lighter above with a clear dark inverted "W" on the back and wings.

Birds recorded as *P. leucoptera* because they were dark above with no obvious or clear-cut markings were seen in ones and twos and in flocks of up to ten with Wedge-tailed Shearwaters over massive shoals of fish between $178\frac{1}{2}$ - $179\frac{1}{2}$ ° E. on 3 Nov., and again occasionally with one *P. cookii* between $118\frac{1}{2}$ - $114\frac{1}{2}$ ° W. on 11 Nov. Birds recorded as *P. cookii* because they were pale brownish-grey above with an inverted "W" on the back in all kinds of light were seen singly and in twos and threes continuously from 176 ° W. on 3 Nov. (meridian day) until 143 ° W. on 7 Nov., with one in the morning and two in the afternoon at 138 ° W. on 8 Nov., one or two every fifteen miles at 131 ° W. on 9 Nov. and 123 ° W. on 10 Nov., and one in the morning and evening at 116 ° W. on 11 Nov.

(Peale's Petrel *Pterodroma inexpectata*. A possible bird was seen at 179 ° E. on 3 Nov. I have since seen another in the Phoenix Is. in June, 1964)

White-necked Petrel *Pterodroma externa*. This is a big petrel with a dark cap, a white face, "black eyes" of varying size, and a very variable "white neck," some hardly having any while others have it clear cut, sometimes with the neck and the whole upper back pearly grey to almost white. The last, especially, often had inverted "W" markings on the back and wings and in the distance were hard to tell from Grey-backed Shearwaters when the flight-pattern did not give them away, though the shearwater seemed a more solitary bird while the petrel seemed more prone to flock. On 9 Nov. at 131 ° W. parties of two to ten petrels were seen mixed with shearwaters all day. On 10 November at 123 ° W. parties of two to four and sometimes flocks of twenty to forty were seen again with some more possible shearwaters, while on 11 Nov. at 116 ° W. parties of two to six were seen all day. The last two birds were seen at 110 ° and 108 ° W. on 12 Nov.

Hawaiian Petrel *Pterodroma phaeopygia*. We expected to see these, if not south of Hawaii at least during the last part of the voyage. We saw very few, if at all, and only south of Hawaii. The species is very like the White-necked Petrel as shown in the sketch in Dr. Murphy's "Oceanic Birds of South America" and I often doubted which was which, and usually added *P. phaeopygia* with a query wherever I record *P. externa* on the charts. The best records include three in the morning and one on the water in the afternoon at 145 ° W. on 7 Nov., and one at 139 ° W. next day. I have since found around Hawaii (where it is very rare) and the Galapagos (where it is commoner but still scarce) that it usually stays within 5/10 miles of land, and is rare more than 50 miles from it, and can be told from *P. externa* by the very dark brown coloration above.

Phoenix Petrel *Pterodroma alba*. This bird does not fly in flocks. It is easily recognised by the sickle-shaped wings, the black under the wing coverts, and the dark head. The white throat is rarely seen because, like most birds in flight, it normally keeps the tail turned to the ship. They have an enormous range, and the last was seen 1800 miles away from the nearest breeding grounds.

The first was seen at 174 ° W. on 3 Nov. (Meridian day). There was one in the morning and two in the afternoon at 168 ° W. next day, one or two all day with rafts of up to twenty at 160 ° W. on 5th Nov., and one

to three all the morning of 6 Nov. at 153°W., with none in the afternoon. Single birds were seen in the morning and afternoon of 7 Nov. at 145°W., and one or two all the time between 139-137°W. on 8 Nov. and every thirty minutes at 131°W. on 9 Nov. Two were seen in the morning and one in the afternoon at 123°W. on 10 Nov., and the last at 117°W., only 500 miles from Cocos Id., on 11 Nov.

Herald Petrel *Pterodroma (arminjoniana) heraldica*. I hoped for this bird, but did not expect to see it. The first doubtful one appeared far away at 179°E. on 3 Nov., and I could only see a white line in the middle of dark under wing coverts. One appeared 20 to 50 yards from the ship for several minutes at 137°W. on 8 Nov., and there were one or two at 132-131°W. next day. The last was seen at 117°W., 1800 miles from the nearest breeding grounds, on 11 Nov.

Kermadec Petrel *Pterodroma neglecta*. Two birds were seen singly at 6½°N. 115°W. on 11 Nov. They were dark with a dirty white head.

STORM-PETRELS: *Hydrobatidae*

Madeiran Storm-petrel *Oceanodroma castro*. I expected to see Leach's Storm petrel *O. leucorhoa*, but failed to do so; the great majority of the storm-petrels seen appeared to be Madeiran Petrels, which have a quite different flight pattern. Many of them showed white margins on the upper wing coverts. The first one or two were seen over a shoal of fish with Wedge-tailed Shearwaters at 179°E. on 3 Nov., with another at 167°W. on 4 Nov. Then one was seen throughout the day between 133-129°W. on 9 Nov., and another all day between 125½-122°W. on 10 Nov., with flocks of up to ten around 124°W. One or two were seen all day between 118½-114½°W. on 11 Nov., one to five at 109°W. and one at 107°W. on 12 Nov., one at 101½°W. on 13 Nov., and two to six at 93°W. and one at 92°W. on 14 Nov. All except those seen on the first day were steadily flying east, though none were seen east of 92°W.

Black Storm-petrel *Oceanodroma melania*. Three dark sooty-brown storm-petrels were seen at 7°N. 124°W. on 10 Nov.

Galapagos Storm-petrel *Oceanodroma tethys*. One or more were seen briefly at 7°N. 93°W. on 14 Nov.

BOOBIES: *Sulidae*

These were few and far between. From previous experience on more northerly routes I expected many more, especially Blue-faced Boobies. This suggests that these birds are more characteristic of the northern and southern equatorial currents.

Brown Booby *Sula leucogaster*. These are reported to breed in the Palau Is. though we saw none there. Two single birds were seen at Helene Shoal in the Carolines at 149°E. on 30 Oct., one 160 miles from land at 166°E. in the Marshalls on 1 Nov., an immature came aboard and stayed overnight at 115°W. on 11 Nov., one was seen at 93°W. on 14 Nov., and a number were seen in Panama Bay on 16 Nov. It is notable that whereas the birds of the west Pacific, Malaysia and Indian Ocean avoid ships, those of the east Pacific and Atlantic freely perch on ships and will roost in the rigging.

Red-footed Booby *Sula sula*. These are very abundant in the Sulu Sea of the Philippines. We saw one at 152°E. south of Truk in the Carolines on 30 Oct., and two at 160°W. ENE of Palmyra Id. on 5 Nov.

ten in the afternoon at 145°W. on 7 Nov. One was seen in the morning, ten at noon, and three including a young one in the afternoon at 138°W. on 8 Nov., and one in the morning and 40 in the afternoon at 131°W. next day, about as far from land as they could get. Fifty were seen at 125°W. on 10 Nov., 1, 20, 20 and 10 at 116°W. on 11 Nov., a possible distant bird at 101°W. on 13 Nov., and five in the morning followed by parties of 10-50 continuously in the afternoon at 93°W. north of the Galapagos on 14 Nov. No more were seen from there to Panama.

Bridled Tern *Sterna anaetheta*. Four flocks of 50-100 were seen at 86°W. on 15 Nov., and several around the entrance to the Panama Canal next day.

Common Noddy *Anous stolidus*. We watched for White-capped and Blue-grey Noddies, but failed to identify them. Birds which appeared to be Common Noddies were seen as follows: three singles and two parties of ten at 142°E. on 29 Oct., two at Helene Shoal at 149°E. on 30 Oct.; one at Ngatik Id. at 158°E. on 31 Oct., two parties of four near Kusai Id. at 164°E. on 1 Nov.; one off Kili Atoll at 169°E. on 2 Nov.; one at 178°E. on 3 Nov.; perhaps twenty with Sooty Terns at 93°W. on 14 Nov.; and possibly some with Bridled Terns at 86°W. on 15 Nov.

White Tern *Gygis alba*. Ten possible birds first seen at 9°N. 131°E. on 27 Oct.; there were two, fifty and then two continuously in the Palau Is. at 135°E. on 28 Oct.; two and ten off Helene Shoal at 149°E. on 30 Oct.; one to three for an hour near Ngatik Id. at 158°E. on 31 Oct.; five records of up to fifteen NE of Kusai at 165°E. on 1 Nov.; two singles off Mili Atoll at 172°E. on 2 Nov.; three and one at 168°W. on 4 Nov.; ten in the morning and up to ten continuously in the afternoon ENE of Palmyra at 160°W. on 5 Nov.; one at 138°W. on 8 Nov.; and 5-15 all day north of Malpelo at 86°W. on 15 Nov.

SKUAS *Stercorariidae*

Pomarine Skua *Stercorarius pomarinus*. This species regularly migrates through the Philippines to winter with Red-necked Phalaropes on the north coast of New Guinea. On 19 Oct. there was one at the Anambas Is. NE of Singapore. One was seen in Surigao Strait in the Philippines on 26 Oct. On 30 Oct. two skuas were seen in the distance at 151°E. south of Truk which could have been either this species or Arctic Skuas *S. parasiticus*. One was seen at 118°W. and two at 115°W. on 11 Nov., five at 93°W. on 14 Nov., and two off Cape Mala, Panama Bay, on 16 Nov.

Great Skua *Catharacta skua*. The first was seen with a big fish it could hardly handle, flying a short distance and then settling on the sea again at 123½°W. on 10 Nov. It seemed all dark, not like the southern pale-naped "chilensis" form. One was seen at 117°W. on 11 Nov., ten from 93° to 92°W. on 14 Nov., and one off Cape Mala on 16 Nov.

PHALAROPE: *Phalaropidae*

Red-necked Phalarope *Lobipes lobatus*. These migrate through the Philippines to winter in thousands on the north coast of New Guinea. None were seen on the Pacific side of this region, but a dozen were seen in four parties at 8°N. on the 100 fathom line in the South China Sea SE of Saigon on 20 Oct.

Sixty-four

Grey Phalarope *Phalaropus fulicarius*. At least a thousand phalaropes seen between 85-84° W. on 15 Nov., the day before reaching Panama, were thought to be this species; they were too small for Wilson's Phalarope.

LAND BIRDS

These provided the biggest surprise of all. At 1230/hrs. on 10 Nov. at 06°54'N. 123°20'W. eight Ring-billed Ducks *Nyroca collaris* flew around the ship for half an hour. This position is 900 miles from the Revilla Gigedo Is. to the north and Cocos Id. to the south, and 1300 miles from land as a duck flies; probably much further in the direction from which they are likely to have come, while if they continued in the same direction there is no land before Easter Island and Antarctica. There was no gale or hurricane on their route. To show that this was no freak occurrence, another showed up two days later at 06°40'N. 109°30'W. They all flew around the ship several times, did not seem at all tired or put out, and soon disappeared again, I think in roughly a SE direction (unfortunately we were so busy trying to identify the species that we did not notice the precise bearing of their departure).

Two birds with long, straight bills of the Godwit type were also seen at 7°N. 93°W., 300 miles north of the Galapagos, on 14 Nov. These paid no attention to the ship.

(*Comment.* This is a most interesting account of a voyage along the biologically most productive part of the tropical seas at the best time of year. The basic factors responsible for the occurrence of large seabird populations in this region are discussed by G. E. Hutchinson in his classic review of the guano industry (Bull. Amer. Mus. Nat. Hist. 96:1-554). A convergence forms along the boundary between the east-going equatorial counter-current and the west-going equatorial currents on each side of it, and much turbulence associated with upwelling of polar bottom water rich in salts occurs here, so that there is a very high plankton production. The appearance of this cold water along the borders of the current (especially the northern side) explains why the water temperature gradually falls from west to east across the Pacific, and the associated appearance of a local flush of plankton explains why this region is so rich in fish and birds, some of them resident in the region, while others occur as winter visitors from higher latitudes to the north and south.

Captain Mörzner Bruyns probably missed the main concentrations of birds along the edges of the current on each side of him, but even so he saw far more than one would normally expect in tropical seas throughout this voyage. During a north-to-south voyage the birds would only appear very briefly as the vessel was actually crossing the boundaries of the current, and they might easily be missed then, while it is unlikely the significance of their presence would be recognised without a close study of the local water temperatures. Northward and southward movements of the boundaries of the current with the seasons may explain why some seabirds such as the Sooty Tern have two breeding seasons in the year on some central Pacific Islands, as the zone of high marine productivity moves back and forth past the breeding stations with the seasons.

In addition to encountering many resident seabirds and winter visitors, Captain Mörzner Bruyns also had the good fortune to encounter many transequatorial migrants on their southward migration, most of them in small numbers but the Short-tailed Shearwater at the peak of its migration

in very large numbers indeed. It is clear from a study of records in higher latitudes that many migrant seabirds, and especially the shearwaters, must cross the tropics in large numbers by a single long, very rapid flight during a comparatively short period of the year. However, apart from some observations of Great Shearwaters *Puffinus gravis* on their northward migration in the western North Atlantic in spring there are very few direct observations of these mass migrations. Captain Mörzer Bruyns' notes are therefore extremely important in indicating how they take place, and in helping to fill in one of the gaps in observations of the great figure-of-eight migration of the Short-tailed Shearwater around the wind-systems of the north and south Pacific between Tasmania and the Aleutians described by Serventy (Proc. 7th Pac. Sci. Congr. 4:394-407).

I have plotted the places where Captain Mörzer Bruyns saw each species opposite his terminal check-list. It will be seen that the migrants in particular turned up at very different, almost mutually exclusive, places. This is presumably because they follow different routes between different mutually exclusive summer and winter quarters and places where they feed on migration so that competition for food between related species is reduced to a minimum. Analysing the records in more detail, the important winter quarters for many seabirds in the region of upwelling off northern New Guinea deserves particular comment, as one of the last great unstudied seabird resorts of the world. Further east, most species are more uniformly scattered across the whole width of the Pacific, though the narrowness of the route followed by the Short-tailed Shearwater on migration across the central Pacific deserves comment. It is also notable that most other migrants, including such New Zealand species as the Sooty and Pale-footed Shearwaters, stay much further east in the tropics, presumably in order to obtain the best advantage from assistance by the trade-winds during the terminal stages of their migration. This note provides the first indication of the winter quarters of the Pacific races of Manx Shearwater, although it has long seemed likely that they must migrate south like the typical form. W.R.P.B.)

BIRDS SEEN DURING A VOYAGE FROM BALBOA TO JAPAN AND THE EAST COAST OF MALAYA

By M. E. JONES, Second Officer, M.N.

[Three important bird communities are found in the North Pacific, one over the tropical convergencies along the boundaries of the equatorial counter-current, already described by Captain Mörzer Bruyns; one in the vicinity of the subtropical convergence around the central archipelagoes in the area (about 20°N. to 35°N.) lying between the NE trade winds and the westerlies; and one to the north over the convergence between the west wind drift and the Kurile Current. The birds which breed at the more easterly sub-tropical islands from Hawaii to Midway are comparatively well-known, and are the subject of an important review by Dr. F. Richardson (Bull. Bishop Museum 218:1-41, 1957), but except for the albatrosses comparatively little is known about their distribution out at sea. Mr. Jones has sent us a most interesting series of notes from his first cruise across this region in m/v "London Advocate" in August-September

1964, and it seems worth publishing them verbatim as an example of a useful type of record from a little-known area. I have added the comments in parentheses.

Dr. Richardson has shown that the island groups support many prosperous colonies of seabirds, some of which were seriously reduced by Japanese feather collectors at the beginning of the century, although they have now mostly recovered again with protection, the albatrosses to such an extent that they have become a hazard to aircraft at the staging-posts in the Hawaiian leeward islands, and have had to be reduced again there. They include a curious mixture of tropical seabirds with a wide distribution to the south, and temperate ones whose main distribution lies to the north. Some of them have complex annual cycles; thus while some petrels and most other species breed in the summer, some of the terns and boobies at least have prolonged breeding seasons with a minor peak of breeding in the winter as well, and the albatrosses, the Bonin Petrel and Markham's Storm-petrel breed in the winter. It is not entirely clear why they do this, but it seems possible that they are cool-water birds whose main range lies over the open ocean to the north where there are no breeding places, so that they have to breed at the southern periphery of their range when they move south in the winter. It will be noticed that Mr. Jones saw surprisingly few albatrosses, which suggests that they at least must move away north in the summer.

The absence of albatrosses is more than made up by the presence of other species. In addition to birds from the Galapagos to the south, the first part of the voyage was enlivened by the appearance of many shearwaters, gadfly and storm-petrels. The Shearwaters seem likely to have been largely Sooty Shearwaters among other species on the last leg of their return migration from California to New Zealand, which has seldom been observed before, though some may have been the Short-tailed Shearwaters seen further along their route to Australia by Captain Mörzner Bruyns. The Gadfly Petrels may, many of them, have been Hawaiian Petrels from Hawaii or the Galapagos, but it seems possible some at least were wintering White-necked Petrels from Juan Fernandez and other places to the south, among other southern species. The storm-petrels may have included the vanguard of wintering Leach's Petrels from the north, or immature birds lingering in their winter quarters for their first summer. The second part of the voyage produced many breeding seabirds from the Hawaiian Islands; while the third produced some birds (especially Bonin Petrels) dispersing out to sea from this group in their off-season, an increasing number of White-faced Shearwaters from Japan, skuas and other species on their southward migration, and what is perhaps the first marine record of a wintering White-necked Petrel from the NW Pacific. W.R.P.B.]

The first part of the voyage was from Balboa by a Great Circle route to the south side of Hawaii, the second by rhumb line to Midway, and the third by Great Circle to Yokohama. The following daily "log" notation is used: Date: Latitude and Longitude: Course in degrees: Speed: Wind: State of sea and swell. All the positions are for noon on the day concerned.

28th Aug.: 07°09'N. 81°08'W.: Var.: 16.29; WSW 2: S/S.

Many Brown Boobies *Sula leucogaster*, Common Noddies *Anous stolidus*, and Sooty Terns *Sterna fuscata* with occasional Blue-faced Boobies *Sula dactylatra* were seen after leaving Balboa. About forty storm-petrels with an unusually forceful flight for that group and very prominent white rumps were seen during the afternoon. (These were identified as Madeiran

Petrels, *Oceanodroma castro*, but particularly conspicuous white rumps are said to be more characteristic of Galapagos Storm-petrels *O. tethys* which have been collected at sea several times already in this area).

29th Aug.: 08°26'N. 87°15'W.: Var.: 15.83: W4: M/S.

Many Sooty or Bridled Terns *Sterna fuscata* or *S. anaethetus* were about, some Brown Boobies, and several Red-footed Boobies *Sula sula* including one brown-phase bird with white tail coverts and red feet seen at close quarters. Several storm-petrels with a more erratic flight and less white on the rump than those of yesterday were seen, which seem likely to have been Leach's Petrel *Oceanodroma leucorhoa* (Presumably immature birds of one of the comparatively dark-rumped Californian populations, which winter in this region).

30th Aug.: 08°57'N. 93°34'W.: 274½: 15.20: WSW 4: M/S.

Many shearwaters and petrels were seen. The commonest were Hawaiian Petrels *Pterodroma phaeopygia*, which were slightly smaller than Great or Cory's Shearwaters, with predominantly brownish-grey upperparts, a dark cap, contrasting dark primaries and tail, a dark mark about the eye, a dark patch leading from the forewing on to the breast and the underparts white except for a thin dark margin around the underwing. Many all-dark shearwaters which could not be identified were also seen (they seem most likely to have been Wedge-tailed Shearwaters *Puffinus pacificus*?) and two or three small shearwaters which were very dark above and white below with a "flutter and glide" flight of the Little/Audubon type (presumably Audubon's Shearwaters *Puffinus lherminieri*, which like the Hawaiian Petrels, possible Wedge-tailed Shearwaters and previous Galapagos Storm-petrels came from breeding colonies in the Galapagos to the south, since these have been collected here). Several Leach's Storm-petrels and a Brown Booby were also seen again.

31st Aug.: 09°50'N. 99°50'W.: 278½: 15.71: W 4: M/S.

Hawaiian Petrels were now common, with occasional all dark shearwaters, two Phalaropes, and a Swallow.

1st Sept.: 10°49'N. 106°11'W.: 279: 15.20: WSW 4/5: MR/M.

Hawaiian Petrels were always visible although often hard to pick up because of their light colouring (the light colouring suggests that the pale birds may have been wintering White-necked Petrels *Pterodroma externa* from the south, since these have been collected even further north than this; the two forms are however very similar and could well be regarded as the same species . . .). Their flight appears to be of a "high-winging" type, that is, often rising well above the horizon though otherwise similar to that of the Great Shearwater *Puffinus gravis* except perhaps for a faster wing-beat. Some of the "all-dark" shearwaters also seen this day had greyish-white underwings, and may have been Sooty Shearwaters *Puffinus griseus*; one of two small black-and-white shearwaters had the dark crown extending well down over the face, which suggests it may have been a Townsend's Shearwater *Puffinus (puffinus) auricularis*. Sooty or Bridled Terns were also seen again. (It seems likely the vessel was now crossing the main path of Sooty Shearwaters migrating south from California to breeding places in Chile or New Zealand; the black and white shearwaters may again have been Audubon's from the Galapagos, but very little is known about the movements of Townsend's Shearwater (now usually regarded as a Californian race of the Manx) away from its breeding

place in the Revilla Gigedos Is. to the north, and it is quite possible that like typical Manx Shearwaters it may migrate south as well).

2nd Sept.: 11°45'N. 112°11'W.: 279: 14.92: W 5: R/M.

Hawaiian Petrels and dark shearwaters were slightly less common today. One of the former had a very distinct white collar separating the head from the body. (It seems likely that in point of fact as with the shearwaters several species of gadfly petrel would be here at this time. This particular character is found in two closely related to the Hawaiian Petrel, the Capped Petrel *P. hasitata* of the Atlantic, extremely unlikely to occur here; and the Kermadec subspecies *cervicalis* of the White-necked Petrel *P. externa* from the SW Pacific. The latter might conceivably find its way to this area as a winter visitor, or alternatively a collar may occur as a rare variation in closely related forms such as the typical "White-necked Petrel" from Juan Fernandes, or the Hawaiian Petrel itself, although their napes are normally dark. See the note on a similar bird seen off Japan on 18th Sept.).

3rd Sept.: 12°40'N. 118°26'W.: 278½: 14.92: SW 4/5: M/M.

Fewer Hawaiian Petrels and dark shearwaters were seen today. Two larger and darker petrels flew alongside at some distance for 15 minutes, in the way seen with Flesh-footed Shearwater *Puffinus carneipes* in the Indian Ocean. (Flesh-footed Shearwaters do not seem to have been recorded in this area before, though as with Sooty Shearwaters this voyage is crossing the path by which the birds which appear in autumn off California would return to New Zealand at this season. Among other possible species, Captain Mörzer Bruyns has also reported birds resembling Black Petrels *Procellaria parkinsoni* in this region in the past, though it has never been collected so far north. Both that species and the Fleishy-footed Shearwater should have a pale bill, however).

4th Sept. 14°26'N. 124°30'W.: 280½: 15.50: W3: S/M.

Two Hawaiian Petrels, and four storm-petrels with a direct, rather buoyant flight which showed plenty of white around the rump and were thought to be Madeiran Storm-petrels.

5th Sept. 15°53'N. 130°75'W.: 283: 16.08: NW3/4: M/M.

No birds seen. (This is the blank area between the tropical and sub-tropical convergences equivalent to the Sargasso Sea of the Atlantic).

6th Sept. 17°02'N. 137°57'W.: 279¾: 16.44: NNE 3/4: M/M.

Hawaiian Petrels reappeared but seemed to have a swifter flight than the previous ones. They seldom "shearwatered" and often resembled a swift-flying tern or skua. However, there seemed little doubt of the identity. (It is not clear if the change in behaviour was associated with any change in the weather, or with the appearance of the Hawaiian subspecies after passing through the territory of the Galapagos birds).

7th Sept. 17°47'N. 144°37'W.: 276¾: 16.12: NE x E 4: M/M.

Hawaiian petrels were present, and a smaller "capped" petrel was seen crossing quite close in front of the bow. Unfortunately a poor view was obtained owing to sun-glare; but it was quite small, about the size of Bulwers Petrel *Bulweria bulwerii*, and dark above, with a hint of an inverted "W" on the wings, a dark "dab" as cap, dark spot by the eye, and the face and underparts white, with a much broader dark margin to the underwing than with the Hawaiian Petrels. The flight was distinctive, swift

and erratic with little resemblance to the usual shearwater or petrel flight. It seemed likely to be some member of the "Cookilaria" group. (If it was really so dark above and around the margin of the underwing, it seems most likely to have been a moderately dark example of Gould's Petrel *Pterodroma leucoptera*, although it was far north for this species; however, the "Cookilaria" which has been collected most often in these latitudes is Stejneger's Petrel *Pterodroma longirostris*, which has a greyer back, and on grounds of probability it was most likely this.)

8th Sept. 18°28'N. 151°40'W.: 275 $\frac{3}{4}$: 16.28: E x N 4: M/M.

Only three birds seen; a Hawaiian Petrel, a bird similar to the smaller petrel of the day before, now thought on the basis of the locality most likely to be Stejneger's Petrel; and a White-tailed Tropic Bird *Phaethon lepturus*.

9th Sept.: 19°41'N. 159°05'W.: 276/290: 15.75: NE 4/5: M/M.

Passed the southern tip of Hawaii at 0230 hrs. No Hawaiian Petrels were seen today, and instead the most numerous species were light-phase Wedge-tailed Shearwaters and Bulwer's Petrels. The former appeared very brown above, darker on the wing tips and tail, and white below with bold dark edges to the underwings, with pale grey bills. The flight was slower than with the Hawaiian Petrels with fewer wingbeats as they banked in typical shearwater fashion. The Bulwer's Petrels seemed slower in flight than those seen earlier in the Atlantic, occasionally giving three or four beats as they hung in the wind, as gulls do on a windy day. Six of the Hawaiian race of the Manx Shearwater *Puffinus puffinus newelli* were also seen, jet black above and white below, and much the same size as the Wedge-tails but with a more rapid flutter-and-glide type of flight; and one similar but apparently much smaller bird similar in size to a Little Shearwater *Puffinus assimilis*. Also two White-tailed Tropic-birds. (No Little Shearwater appears to have been recorded yet at Hawaii, though their absence there is rather surprising).

10th Sept.: 21°59'N. 164°45'W.: 290: 16.04: E x N 4/5: M/M.

Light Wedge-tailed Shearwaters were again common, with 25-30 Bulwer's Petrels, and a Turnstone *Arenaria interpres* flying NE in the afternoon.

11th Sept.: 24°12'N. 171°24'W.: 289 $\frac{3}{4}$: 16.33: NE x E 4/5: M/M.

Light Wedge-tailed Shearwaters were very numerous, with several Bulwer's Petrels and two Hawaiian Petrels. Many Sooty, Bridled or Spectacled Terns were about, and another Turnstone was seen.

12th Sept.: 26°43'N. 177°57'W.: 293: 16.17: ESE 4: M/S.

Terns similar to Bridled Terns were very numerous. A white streak could be seen extending behind the eye, and they seemed browner above than might be expected with Spectacled Terns *Sterna lunata* though I am not familiar with that species. Wedge-tailed Shearwaters were again very common, and Christmas Shearwaters were seen in groups of fifty or more throughout the day. They were relatively easy to identify by their swift flight, made up of beating, gliding and shearwatering, often rising well above the horizon; their general brown colour, rather like a Great Skua *Catharacta skua*, paler above and below than with a Sooty Shearwater; the appearance of a white edge to the wing coverts and secondaries; and the general shape of the body, like a torpedo, with head, wings and tail often appearing symmetrical. Both White-tailed and Red-tailed Tropic-

birds *Phaethon lepturus* and *P. rubricauda* were seen, one White Tern *Gygis alba*, and the first two possible Bonin Petrels *Pterodroma hypoleuca*. (The vessel was passing the last and greatest seabird colony on Midway Island at the west end of the Hawaiian Chain at this time. The absence of the albatrosses which breed here in such numbers in the winter is very notable).

14th Sept.: 28°57'N, 174°55'E.: 289: 16.12: ESE 3: S/S.

Two possible Bonin Petrels and one Turnstone seen.

15th Sept.: 31°01'N, 167°54'E.: 288½: 16.12: SE 3: S/S.

Bonin Petrels occurred at irregular intervals all day.

16th Sept.: 32°39'N, 160°37'E.: 284¾: 15.44: SW/N 3/5: M/M.

Considerable numbers of Bonin Petrels were seen and the first good views obtained. The upperparts were a medium grey with a dark inverted "W" on the wings, and the underparts were white. There was considerable variation in the extent of the dark cap, a dark spot about the eye, a dark patch leading from the forewing on to the breast, and the dark margins of the underwing, and some birds seemed to have almost completely black faces. They were smaller than Hawaiian Petrels, but had a very similar flight-pattern. (Their variable appearance may have resulted from a varying state of moult, or from the presence of other species of "Cookilaria" petrel among them). One immature tropic-bird was also seen, one possible Leach's Petrel, and a Black-footed Albatross *Diomedea nigripes* appeared when the wind and sea got up in the late afternoon, accompanied for part of the time by a large dark shearwater that could have been a Flesh-footed Shearwater. (There is little information on the large dark shearwaters occurring in this region, but the Sooty Shearwater is by all accounts the commonest; Solander's Petrel *Pterodroma solandri* is also said to have been collected further west).

17th Sept.: 33°45'N, 153°07'E.: 280: 15.36: E 3: S/S.

Bonin Petrels were seen during the morning, and a brief glimpse was obtained in the afternoon of a large "dark above and white below" shearwater that may have been the first White-faced Shearwater *Puffinus leucomelas*.

18th Sept.: 34°40'N, 145°20'E.: 278: 15.68: NE 3: S/S.

Approaching Japan during the last full day of the Pacific crossing Bonin Petrels remained numerous, and great numbers of White-faced Shearwaters were seen. They appeared uniformly brown above and white below, with a variable amount of white on the head and neck, no doubt indicating a variable amount of streaking. They were large birds, the size of Great Shearwaters, with a heavy flight. One other petrel intermediate in size between the Bonin Petrels and White-faced Shearwaters also showed the characteristic markings of a White-necked Petrel, and many Arctic Skuas *Stercorarius parasiticus* were seen with the petrels and shearwaters during the afternoon.

(As pointed out in connection with the observation of a similar bird on 2nd September, true "White-necked" Petrels *Pterodroma externa cervicalis* have in the past only been reported in the extreme SW Pacific, in the area between the Kermadec Is., the New Hebrides and Fiji, since the closely related population *P. e. externa* from Juan Fernandez usually has a dark nape. It seems possible that a white collar might occur as a rare

variation in such normally dark-necked east Pacific petrels as the Hawaiian Petrel or the typical form of the "White-necked" Petrel [*P. e. externa* in the NE Pacific]; but in any case a true "White-necked" Petrel of the Kermadec population *P. e. cervicalis* has recently been reported in moult on 29 July 1962 in Japan by N. Kuroda (Misc. Rep. Yamashina's Inst. Orn. Zool. 3:88-90), so that it appears that this bird at least may perhaps winter north across the equator towards Japan. In which case this appears to be the first record of a bird of this subspecies seen at sea in these newly-discovered winter quarters).

Only Japanese Gulls *Larus crassirostris* were noticed in Yokohama bay next day. Between 2nd-23rd Oct. a voyage was also made from Yokohama to eastern Malaya, returning to Kamaishi, N. Honshu, Japan. Numerous White-faced Shearwaters were seen off the coast of Japan on the outward voyage, with occasional birds, and also infrequent Blue-faced Boobies *Sula dactylatra* in the China Sea. Many Great Frigate-birds *Fregata minor* were seen at anchor off Kuala Rompin, Malaya, and many thousand White-faced Shearwaters, many Arctic Skuas, and two Laysan Albatrosses *Diomedea immutabilis* were seen the day before returning to Kamaishi. Several migrant land birds were seen or caught on the outward passage, including Sedge Warblers, Tree Pipits, Isabelline Shrikes, Swallows, and a species of *Accipiter*.

TWENTY-SIX THOUSAND SQUARE MILES OF BIRDWATCHING

By CAPTAIN P. P. O. HARRISON, S.S. "KENT"

Whilst I was on leave my ship was ordered to the new refinery at Marsden Point, Whangarei, on the East Coast of the North Island of New Zealand. I flew to Kuwait to join the ship; and went to New Zealand by way of Cape Leenwin as the Torres Strait is not deep enough for a modern laden tanker. From Whangarei I took a part cargo to Palau Bukom, Singapore, and went by way of the Great Barrier Reef and through the scattered islands of the Eastern Archipelago; from thence I returned to Mina-al-Ahmadi, Kuwait, by way of the Malacca Strait, Bay of Bengal, Malabar Coast of India and Arabian Sea.

The total distance steamed during this voyage was 17,552 miles; and during the whole of the voyage there was a constant watch for birds, all those seen being logged. It is interesting to discover what area was profitable during the voyage from a birdwatching point of view. The Admiralty formula for the Dip of the Sea Horizon = .98 square root Height of Eye. My average Height of Eye during laden and ballast passages being 51 feet meant that the average distance of the Sea Horizon was 7 miles—7 miles on each side of the ship, and all round. My mean number of hours of daylight was 12: and as much of the voyage was spent in the Tropics where there is little or no twilight it may be taken that the horizon was visible during these 12 hours. So the mileage covered for birdwatching purposes may be reduced by half: 8,700 miles. This makes a sea area visible to the naked eye, except on the few occasions when it was obscured by dust and rain, of 121,800 square miles ($8,700 \times 14$), or almost $1\frac{1}{2}$ times the area of the British Isles. But the 'useful' range for the naked eye to detect, say, a large petrel, and then to identify it with the aid of powerful binoculars, is a mile and a half, or a three mile swath across the ocean, representing, with the allowances given above, an area of 26,100 square miles ($8,700 \times 3$). Eyes, trained to sharpness, and exercised by constant watching, swept this area. Little escapes the eyes of the trained watchkeeper. A tern on a submerged slat in calm weather at a mile and a half looms 'as big as a house.'

I sailed from Mina-al-Ahmadi, Kuwait, on 24th May, 1964. At Mina there was a complete absence of birds. Through the Persian Gulf there were fairly large flocks of Brown-winged and Lesser-crested Terns, and a few Brown Boobies. In the Gulf of Oman a Wedge-tailed Shearwater and several Brown and Blue-faced Boobies.

During the thousand mile crossing of the Arabian sea three petrels were seen: and one Red-billed Tropic-Bird 150 miles from the Malabar Coast of India. Coasting for 750 miles some 25 miles offshore down the Malabar Coast produced only 3 unidentified birds and 2 Wedge-tailed Shearwaters.

In the Indian Ocean, before the Equator was reached, 6 Wedge-tailed Shearwaters were seen; and one White-faced Storm-Petrel came on board. These birds are quite docile. They may object when a wing is extended for measuring, but will settle themselves in the palm of the hand once it is released.

From the Equator to the Latitude of the Cocos Islands, 12° South, there were several dozen Wedge-tailed Shearwaters; and within 150 miles of the islands a Red-billed Tropic-Bird, 3 White-tailed Tropic-Birds, and flocks of Blue-faced Boobies.

Seventy-three

At approximately 17° South the first of the sub-antarctic species was met, Soft-plumaged Petrels, and these remained in small numbers until we had rounded Leeuwin. Within 300 miles of the West Australian coast there were several instances of White-faced Storm-Petrels. On the evening of 7th June, in 33°30'S., 114°14'E. a Yellow-nosed Albatross came close to inspect us; and around at the same time were several Short-tailed Shearwaters, some Soft-plumaged Petrels, and a Great-winged Petrel.

Crossing the Great Australian Bight between Leeuwin and Cape Otway, Victoria, we were accompanied by Wandering, Black-browed and Yellow-nosed Albatrosses, Short-tailed and Pintado Petrels, and Southern Skuas; and on the Eastern side of the Bight, in addition to these, Fairy Terns and White-faced Storm-Petrels. We had a night passage of the Bass Strait, but before dark a Giant Petrel was seen.

The next morning, 12th June, we were in the Tasman Sea: and on the passage across it to Cape Maria Van Diemen on the northern tip of New Zealand there were Wandering, Black-browed and Yellow-nosed Albatrosses; Giant, Short-tailed, Pintado, Brown and Great-winged Petrels; and White-faced Storm Petrels.

On the northern coast of New Zealand, in addition to the three species of Albatross, White-faced Storm-Petrels and Great-winged Petrels there were a dozen Southern Black-backed Gulls and one Common Diving-Petrel.

We arrived at Whangarei on the morning of the 16th June and were met by Southern Black-backed Gulls and Silver Gulls. During the whole passage no land birds were seen.

After discharging our cargo of 49,000 tons of crude oil we spent two days at anchor outside the Heads for a periodical overhaul. In addition to the Gulls there were over 10,000 Dusky or Fluttering Shearwaters, Giant Petrels, White-fronted Terns, Australian Gannets, a Yellow-nosed Albatross, and half a dozen Little Penguins.

We sailed from Whangarei on the evening of the 21st June and headed for Coloundra Head, off Brisbane, to embark a Torres Strait Pilot for the passage up the Great Barrier Reef. The crossing of the Tasman Sea was similar to the outward passage. After embarking the Torres Strait Pilot we headed north along the Queensland coast. Silver Gulls were our constant companions; and there was an occasional Brown Booby and Australian Gannet; also a Brown-winged Tern and several unclassified terns. On the sandy beach of Bewick I., one of the 'desert' islands in the northern part of the Great Barrier Reef, there were a number of large white birds spreading their wings which I think must have been Australian Pelicans, but for the 1200 miles from Brisbane to Thursday Island in the Torres Strait it was a very poor 'bag.'

The passage across the Arafura Sea was birdless. At the Eastern end of Portuguese Timor a Christmas Frigate-Bird and a Lesser Frigate-Bird were identified, and there were other Frigate-Birds in the distance. In addition there were a hundred plus terns, of which 2 dozen were Lesser Crested Terns; and there was a Brown Booby. There were Blue-faced Boobies in the Flores Sea; Frigate-Birds, large terns and a Booby in the Java Sea; Frigate-birds in the China Sea; and a Tern in the Singapore Strait. We arrived at Pauau Bukom, Singapore, on the morning of the 4th July; and during our three days there saw no birds at all.

In the Malacca Strait there were several dozen terns and a few Lesser Frigate-Birds. In the Bay of Bengal a dozen or so Wedge-tailed

Shearwaters; up the Malabar Coast a Wedge-tailed Shearwater and another visit from a White-faced Storm-Petrel. This bird weighed 48 grammes, approximately $1\frac{1}{2}$ ounces but nevertheless had a wing span of $16\frac{1}{4}$ inches.

Crossing the Arabian Sea there were several Wedge-tailed Shearwaters and two White or Black-bellied Storm Petrels, it was hard to define which species; in the Gulf of Oman flocks of 50 plus Wedge-tailed Shearwaters, and as the Iranian coast was approached two Aden Gulls took up station astern.

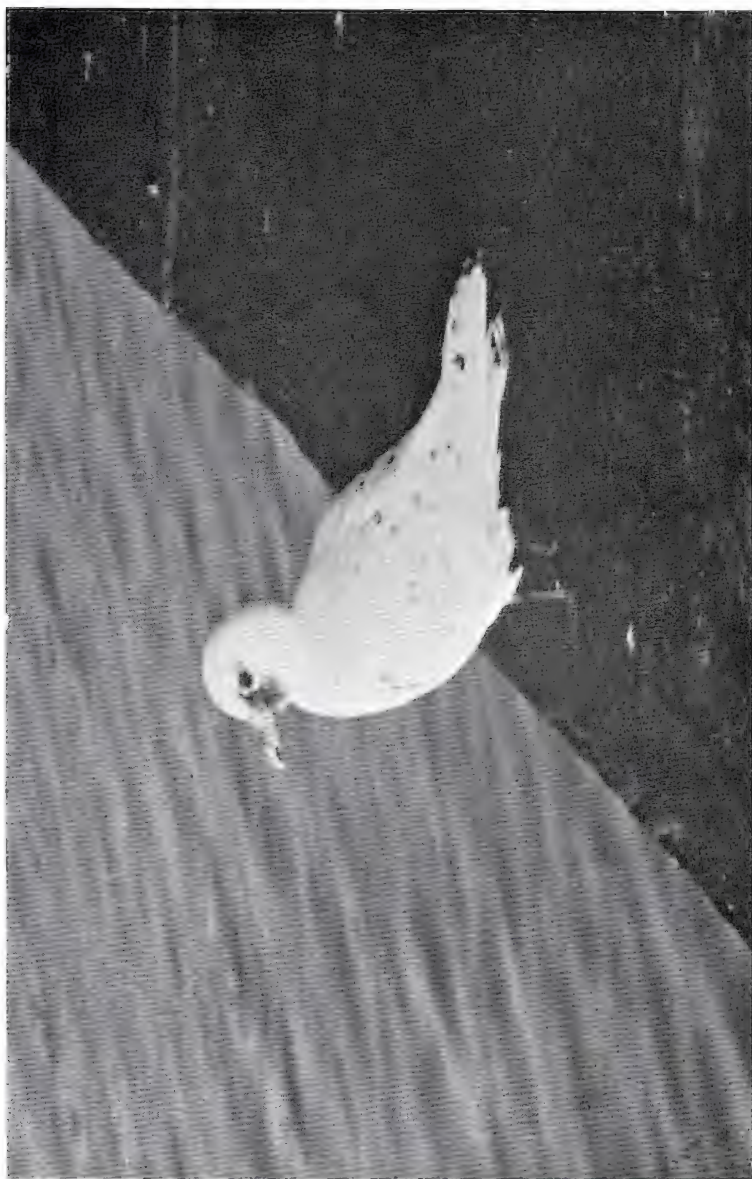
Brown-winged Terns 'bombarded' the ship as she passed through the Strait of Hormuz at night into the Persian Gulf, and chattered to one another in harsh, raucous voices. The next day there were many of these birds to be seen.

We arrived at Mina-al-Ahmadi during the early hours of the morning of the 17th July: so for this voyage this ends the log.

[*Comment.*—This account serves to emphasise the disparity which occurs from one sea voyage to another over similar routes in the numbers of species observed. Captain Harrison's watchkeeping officers are well accustomed to keeping the bridge bird log up to date in each watch and discussing identification at the time. And yet many species frequently seen in the seas around Australia, New Zealand, in the Arabian Sea and Persian Gulf were not observed on this occasion. Many voyages over the same routes at different seasons are necessary before a realistic pattern of the sea birds which may be observed is possible.

As one whose service afloat was spent largely as a gunnery officer spotting fall of shot through binoculars at ranges up to 18000 yds. I can support the view that one can certainly distinguish the larger sea birds at the short 'sub calibre' target ranges of 3,000 yds. in calm clear weather, but specific identification is another matter.

The sea report sheets of Chief Officer J. H. Agnew, M.S. Wharanni, whose ship left Brisbane on 13th June, 1964, passing north inside the Great Barrier Reef en route to Aden via the Torres Strait compare almost identically with Captain Harrison's reports throughout the passage of the Great Barrier Reef. G.S.T.]



IVORY GULL

(Stornoway—Isle of Lewis)

Photo: R.N.B.W.S.—Lt. Cdr. W. A. J. Cunningham, R.N.R.

Note: The few brownish marks on back and wings and trace of dark sub-terminal band on tail indicate that bird had not reached full adult white plumage.

Seventy-six

ASHORE IN THE OUTER HEBRIDES

By LIEUTENANT COMMANDER W. A. J. CUNNINGHAM, R.N.R.

46, Westview Terrace, Stornoway, Isle of Lewis.

To a bird-watcher, connected with the sea, living on an island is rather like living on a large ship; it is merely a matter of relative motion. The birds come to us where we live in the Outer Hebrides instead of we to them. Our "ship" is, relatively speaking, on eternal passage either north or south according to the season, passing through a stream of birds on migration from pole to pole and points between. Although the successive waves of birds we meet are more predictable than would be the case were we properly sea-borne, we still receive our quota of off-course strays to enliven our days. Like a well-trained ship's company too, the Islanders bring news of the latest arrival to the "Bridge" at Stornoway, whence it appears from time to time in various contemporary journals.

Our steaming lights, the lighthouses on the Flannan Isles, the Butt of Lewis, Tiumpan Head and Barra Head, attract passing birds, and are a fruitful source of information as well as warning other vessels of our presence!

Always with our attendant flocks of gulls and Fulmars, followed by an occasional Gannet and Leach's Fork-tailed Petrel, our "ship" steams on, sometimes through calm, blue seas, sometimes taking them green over the bows.

Having, perhaps, established my qualifications as a contributor to "Sea Swallow," I hope the following jottings will encourage R.N.B.W.S. members to "make their number" on the Custom House at Stornoway, our "Action Information Centre" (if it isn't called something else now!)

But it isn't only information or news that is brought to me at the Custom House; birds, dead and alive, and fascinating recoveries of birds ringed elsewhere find their way there. In fact, one never quite knows what next to expect, when, as has happened, a slightly injured but very much alive Golden Eagle turned up, having been found on the moor under power lines, with which it had doubtless collided. This bird subsequently featured in the National press under the headline, "KING OF THE AIR FLIES B.E.A.," when it was sent to Glasgow by British European Airways for treatment. On another occasion, a friend walked into my office with a splendid Goshawk on his wrist.

The telephone also can bring disconcerting news, such as the capture of a rare east European bird, a Red-headed Bunting, on an island, 100 miles away at the other end of the Hebrides, or of the presence in a nearby house of a "penguin." I really should have known better, but I checked on this one and, as I might have expected, found a poor little Guillemot standing disconsolately on the kitchen floor. However, I really had to admit to the excited captor that it did look a little like a penguin in that posture!

In a small community like this one finds oneself involved in birds sometimes to an embarrassing degree. I remember once that I was foolish enough to tell the reporter of the local newspaper that I had listened to a Cuckoo calling some 120 times consecutively at 3 o'clock in the morning. Shortly after I happened to get married and one of the telegrams, purporting to come from a Cuckoo, contained greetings and the assurance that he wouldn't keep me awake that night!

While not intending to embark on a Cook's Tour of these Islands, I must mention, in passing, the plethora of wild fowl inhabiting the lochs of the South Uist western littoral at all seasons of the year, the fantastic numbers of sea-birds on the cliffs of Barra Head, the Flannan and the Shiant Islands, and the rocky islets of North Rona and Sula Sgeir, with their breeding colonies of Gannets and Petrels. It would be a formidable task to count the number of Mute Swans in North and South Uist, and the density of Golden Eagles in the hills of Lewis and Harris is probably higher than in any other part of the United Kingdom.

Any part of this long string of islands is therefore worth a visit but, finally to flog our analogy to death, the most profitable times are when we are passing through the equinoxes and the stream of birds is most concentrated. Then one may hope to come across almost any European species making an "assisted passage." I myself have yet to see one of the Ospreys which seem to frequent the western seaboard every June; nor have the Purple Heron, Grey Phalarope and Red-throated Pipit waited long enough to be seen by me. But an Ivory Gull, a Long-Eared Owl and a Hornemann's Redpoll are among those unexpected sightings which will long be remembered.

Another memory is that of one of our resident falcons, a Merlin, chasing a terrified Meadow-pipit by the shore of a Lewis loch. I had just got both birds in my binocular field of view when the pipit disappeared down a rabbit hole and I was astonished to see the falcon disappear after it, completely out of sight! Still more astonished was I to see the Merlin reappear with the hapless pipit clutched in one foot. Pausing to despatch its prey, the bold little intruder flew off to feed herself or her grotesque and savage nestlings.

Again, I shall never forget the day I lay in wait between the possible breeding territory of a Hen Harrier in South Uist and its hunting ground in order to discover its nest. I was unsuccessful but lucky enough to witness several times the wonderful switchback display flight by the cock, when, alternately, he climbs sharply to stalling point some thirty feet up then plummets earthwards to recover within inches of the ground, repeating the evolution till out of sight.

Or the day when the first Collared Dove for the Outer Hebrides was spotted sitting in a tree in the Sornoway Woods, a red-letter day indeed, for the nearest known colony was in Moray-shire, on the other side of Scotland. The day, three years later, when the first nest of this now flourishing community, was found in a tree outside the Sheriff-Court House in the middle of Sornoway, my brusque summons to which gave me some grounds for trepidation until I learned its real cause! The Collared Dove, however, holds a particular place in my affections for it enabled me to bring off a coup which seldom falls to the lot of a bird-watcher. Our Vice-Chairman, Captain Casement, was arriving a year or two ago by plane in one of his other capacities and a casual invitation by me to have a look at a Collared Dove, a bird new to him, was probably received with well-concealed disbelief. Mind you, I was taking a risk for I hadn't seen the particular pair concerned for some days, but when we stopped at the farm-house on the way into town and looked over the wall, there they were, not ten yards away. It was just as well, for the salmon proved to be less reliable!

One of my most delightful experiences was to watch the delicate little Red-necked Phalaropes on their breeding lochs, the gaudy dames

pirouetting fearlessly at one's feet in the shallows, while the dun-coloured cock sits on an invisible nest in a tuft of grass, once lost never rediscovered.

Summer days and nights on the moors are clamant with the voices of birds. The haunting calls of the Whimbrel and Golden Plover, the weird wails of the Red and Black-throated Divers, the mewing of the Skuas and the purring trill of the Dunlin are as reminiscent of summer as the resonant trumpeting of the Whooper Swan or the whistle of the Goldeneye is of the winter landscape. When summer draws near one longs to hear once again the conversation of the Red-throated Divers as they fly in from the sea to their breeding loch, just as the music of the grey geese coming in from the north reconciles one to the onset of winter.

The Outer Hebrides may just be a Faunal Area to the biologist but they are a "nest of singing birds" to me.

SHORT NOTES

BIRD NOTES FROM A SUBMARINE AT THE ARCTIC ICE EDGE

Contributed by LT. R. G. MENZIES, R.N.

[*Comment*—It is no longer news for submarines to visit Arctic waters, or penetrate for some distance under the pack ice. They are not ideally designed for birdwatching, but even so records of seabirds in such high latitudes are few, and must therefore always be valuable even if identification is not always easy through a periscope. We have been fortunate to receive the following notes from an observer who visited the region north of Jan Mayen in a submarine in February and March 1964. He reports that the birds were seen at rather infrequent intervals, sometimes when the vessel was on the surface, sometimes at periscope depth, and once through the periscope under the ice! Editor.]

Steering northward past St. Kilda in late February small gulls, probably Kittiwakes *Rissa tridactyla*, Great Black-backed and Herring Gulls *Larus marinus* and *L. argentatus*, Northern Gannets *Morus bassanus* and Fulmars *Fulmaris glacialis* were seen. The Great Black-backs and Herring Gulls were seen to 60°N., the latitude of the Shetlands, and Kittiwakes were seen north to 69°N. 08°57'W. on 25th February, in company with Fulmars and Little Auks *Plautus alle*. Further north only Fulmars and Little Auks were seen, sometimes in considerable numbers, with occasional Glaucous or Iceland Gulls *Larus hyperboreus* or *L. leucopterus* north of Jan Mayen.

Numbers of seabirds appeared as if from nowhere on sunny days near Jan Mayen. They included Little Auks, Fulmars, Brünnich's Guillemots *Uria lomvia*, with occasional Kittiwakes and Gannets, a possible storm-petrel on 25 February (smaller than a normal petrel, swallow-sized, and very dark with a very fast wingbeat when seen through a periscope at 60 yards) and two possible phalaropes on 3 March (appeared sitting on the water 300 yards away in foggy weather on 3 March, and closely resembled phalaropes seen in Britain). Puffins were not seen, though they are reported to breed on the island.

Fewer and fewer birds were seen approaching the ice-edge north of Jan Mayen, with Fulmars up to 72°N., though they kept clear of the ice edge. Occasional Little Auks were seen in parties of up to half a dozen in leads in the ice on 27th February and 29th February, when still within the ice edge, one possible Great Skua and one possible Glaucous Gull were sighted. On 4 March when the vessel was submerged at 150 feet beneath ten feet of ice a bird was seen swimming underwater among a few fish and jellyfish in a considerable concentration of plankton. The view was distorted and colours were hard to assess through the periscope under water, but the bird looked like a Little Auk, and could hardly be anything else there. Two days later an Ivory Gull *Pagophila eburnea* was seen inside the ice.

The weather was consistently mild due to a persistent southerly airstream with winds between force 2 and five throughout this period, and the lowest temperature recorded was 14°F. On 15 March a small finch-like bird was seen with two Bearded Seals along a lead in the ice. It had some red-brown markings and by elimination seems most likely to have been a Snow Bunting *Plectrophenax nivalis*. It landed on the fore-casing and eventually flew off towards Greenland.

TERNs ON KHUBBAR ISLAND, PERSIAN GULF—1958/59

Contributed by MR. V. A. D. SALES,

c/o The Kuwait Oil Company Ltd., Ahmadi, Kuwait, Persian Gulf.

[*Note by Editor.*—A brief summary of a count of colonies nesting on this island on 11th July, 1958 appeared in *Sea Swallow*, vol. 12, 1959, but the full report was withheld pending a further visit in 1959. Mr. Sales was unable to visit the island in 1959 until 6th August. Owing to sand haze his boat missed the island, and a landing was not made until 4 p.m. Here he found a local shooting party, with the birds in a state of alarm and confusion, and neither time nor opportunity allowed him to make a detailed study. On this occasion no eggs were found and all fledglings were over three weeks old. The total number of birds appeared far less than in 1958, Brown-winged Terns and young being estimated at about 1600. There were 15 Common Terns with four young and two Lesser-crested Terns, these two species not having been noted in 1958.

The report is now published in full.]

On 11th July, 1958, a visit was made to Khubbar Island 16 miles east of Kuwait in the Persian Gulf.

The island is roughly circular and saucer-like in shape, the north and east beaches composed of flat rocks, the remainder sandy. Much of the island is covered with low dried up scrub, with bare patches here and there. The island is uninhabited.

Three species of terns were found breeding.

THE BROWN-WINGED TERN *Sterna anaetheta*.

This was the most numerous species and it was estimated that there were between 2,000 and 2,500 birds on the island. Nests were all over the island, frequently beneath the shrubs. Nests in exposed positions contained nesting material and were generally well made, but those under the shrubs contained no nesting material and were merely shallow scrapes.

A sample count of 50 nests taken at random revealed 29 with 1 egg, 13 with 2 eggs, 7 with 1 chick, and the remaining nest with 2 chicks. Occasionally an egg was seen to be wet.

These terns perched frequently on the low shrubs and three birds with nests below the shrubs feigned injury, fluttering among the shrubs. Injury feigning was not observed by any birds nesting in the open. The Brown-winged Terns did not return to their nests as quickly as the Caspian and White-cheeked Terns, but remained perched on the shrubs until one had moved well away.

From time to time they would fly over the sea and every four or five yards, sometimes less, hit the water with their bellies in rather an ungainly way, repeating the performance four or five times. These birds were doubtless fishing for they flew back direct to their nesting sites, not joining those that were packed along the few feet of beach above the water's edge. The wet eggs were probably caused by these birds.

THE WHITE-CHEEKED TERN *Sterna repressa*.

It was estimated that there were 1,000 to 1,300 of these terns on the island with nests and young.

All nests appeared to be on open ground and no bird was seen to leave the shrubs. Nesting material was used though less than in those of the Brown-winged Terns on open ground. A casual count of nests revealed 14 with 1 egg, 5 with 2 eggs and 3 with 1 chick.

On the beach these terns were invariably standing in the water, frequently allowing the waves to wash almost right over them.

THE CASPIAN TERN *Hydroprogne caspia*.

Caspian Terns, of which there were 300 to 350 birds, were nesting in the centre of the island on a clear sandy patch, and it was possible to count all nests. There were three colonies. The largest contained 180 nests with a single egg each and 1 nest with 2 eggs. The second largest colony contained 44 nests with 1 egg, 5 nests with 2 eggs and 1 nest with the only chick of the species seen. The third colony contained 25 nests with 1 egg, 14 nests with 2 eggs and 7 other scattered nests with 1 egg each.

Nests in each colony were very close together averaging 8 to 12 inches apart, and in general nests contained no nesting material. The Caspian Terns did not leave their nests until one approached to within 20 to 30 feet, when they all rose together to fly around just above one's head and return to their nests in one body as one moved away. Unlike the other terns the Caspian Terns were not seen on the beaches, nor were they seen beyond the immediate vicinity of the island.

TERNS AND GULLS SEEN AT KUWAIT

Caspian Tern *Hydroprogne caspia*. Every month except November.

Common Tern *Sterna hirundo*. January to April.

Little Tern *Sterna albifrons*. November, February to July.

Sandwich Tern *Sterna sandvicensis*. April.

White-winged Black Tern *Chlidonias leucoptera*. Occasional flying north in May, with thirty on the 11th.

Gull-billed Tern *Gelochelidon nilotica*. May to July.

Brown-winged Tern *Sterna anaetheta*. May and July (Khubbār Id.).

White-cheeked Tern *Sterna repressa*. July (Khubbār Id.).

Lesser Crested Tern *Sterna bengalensis*. April, August, with over 200 on the 30th.

Black-headed Gull *Larus ridibundus*. December to April, August, November.

Slender-billed Gull *Larus genei*. April, July, with sixty on the 15th.

Common Gull *Larus canus*, April, June, July.

Most records have been for numbers less than 10 unless stated above with the following exceptions:—Caspian Terns and Black-headed Gulls up to 300 on several occasions. Common Terns and Lesser Black-backed Gulls up to 30 or 40 birds.

SOME OBSERVATIONS OF LAND BIRDS—THE BLACK SEA, 1964

Contributed by CAPTAIN E. F. AIKMAN, S.S. 'Empress of Britain,' Canadian Pacific Steamships Ltd., P.O. Box 21, Royal Liver Buildings, Liverpool, 3.

In May this year my ship was cruising through the Mediterranean en route to Black Sea Ports.

This was my first voyage through the Mediterranean since the war and I had rather expected that the spring migration would have been at an end before my arrival. However, particularly in the Black Sea, it seemed very much otherwise. At Istanbul, Odessa and Piraeus I was informed that it had been cold for the time of year so the normal migration period might have been somewhat delayed.

On 12th May in the eastern Mediterranean land birds were about my ship all day. Several Yellow Wagtails were observed close at hand on deck. One which I handled was the Black-headed variety. A Woodchat Shrike was seen on one of the after samson posts. The colours on the head were seen clearly and the white shoulder patch, but I did not notice the white wing bar. During the forenoon a Nightingale was picked up injured which died later. Several Turtle Doves were in evidence, probably *S. turtur*, but none seen close enough for the neck pattern to be distinguished.

On 15th May my ship entered the Black Sea. It was a calm clear day with an overcast sky, and the weather remained cloudy but clear with light breezes thereafter. All day long numerous land birds were about the ship, many of which I had not seen before. The only reference book at my disposal was 'A Field Guide to the Birds of Britain and Europe' and this proved most valuable. Where I have quoted positive identification the birds were observed either close on deck or through binoculars in sufficient detail to permit a reliable comparison with the illustrations in the book. In several instances identifications were confirmed from birds which had come to grief and were sent to the British Museum (Natural History) at the end of the voyage.

Swallows, Black-headed Buntings and Shrikes, the Lesser Grey and Red-backed (male and female), were the most numerous. Some of the Red-backed Shrikes showed no white above the black on the sides of the face as in the illustration, and one had a slight rusty patch on either side at the base of the lower mandible. I noticed too that with the Black-headed Buntings the yellow collar seemed to extend further round the neck. Both the Lesser Grey and Red-backed Shrikes were attacking and killing other birds frequently, including Swallows and Black-headed Buntings. One Masked Shrike was seen.

There were a few Nightingales and I noticed some of them waving the tail up and down in the manner of the Redstart, the female of which somewhat resembles a Nightingale. One of these birds, however, was identified by the British Museum (Natural History) as a Nightingale, and they all appeared to be the same species. No male Redstart was seen.

At various times a number of small 'warbler type' birds were seen which gave no opportunity for detailed identification, but two which died were identified by the museum later as Willow Warbler and Common Whitethroat. A Red-throated Pipit and a Quail came on board and a female Red-breasted Flycatcher spent some time in my room.

Of the larger birds, Common Turtle Doves were around in small

numbers continuously, and the following other species were observed:— Two Rollers and one each of Hoopoe, Hobby, Peregrine and Heron *Ardea cinerea*. Squacco Herons were seen quite frequently, singly or in small parties, flying low and to the northward.

Another bird observed at close quarters was of similar size and appearance to the Little Bittern but had only a suggestion of black on the crown; the legs were yellow and the bill greenish yellow. It took off, disobligingly, when I was trying to take a close-up photograph.

We arrived at Odessa on 16th May, where I found that there was no ornithological museum, and sailed on 17th May for the Piræus. Land birds were once again around the ship but in smaller numbers. Apart from those seen previously a female Lesser Kestrel came on board (the lower part of the brown area of the closed wing was spotted), and during the afternoon was seen to eat another bird on one of the forward samson posts. Later a falcon visited the ship which, from my description, the British Museum (Natural History) considered was most probably a Red-footed Falcon.

Arriving off the entrance to the Bosphorus on 18th May further bird observations had to give way to more important problems of navigation.

LIST OF LAND BIRDS IDENTIFIED

Heron <i>Ardea cinerea</i>	Willow Warbler
Squacco Heron <i>Ardeola ralloides</i>	<i>Phylloscopus trochilus</i>
Little Bittern <i>Ixobrychus minutus</i>	Red-breasted Flycatcher
Hobby <i>Falco subbuteo</i>	<i>Muscicapa parva</i>
Peregrine <i>Falco peregrinus</i>	Red-throated Pipit <i>Anthus cervinus</i>
Red-footed Falcon <i>Falco vespertinus</i>	Yellow Wagtail <i>Motacilla flava</i>
Lesser Kestrel <i>Falco naumanni</i>	Black-headed Wagtail
Quail <i>Coturnix coturnix</i>	<i>Motacilla f. feldegg</i>
Common Turtle Dove	Lesser Grey Shrike <i>Lanius minor</i>
<i>Streptopelia turtur</i>	Red-backed Shrike <i>Lanius collurio</i>
Roller <i>Coracias garrulus</i>	Woodchat Shrike <i>Lanius senator</i>
Hoopoe <i>Upupa epops</i>	Masked Shrike <i>Lanius nubicus</i>
Swallow <i>Hirundo rustica</i>	Black-headed Bunting
Nightingale <i>Luscinia megarhynchos</i>	<i>Emberiza melanocephala</i>
Common Whitethroat	
<i>Sylvia communis</i>	

HERE AND THERE WITH THE BIRDS

FROM THE EDITOR'S LOGBOOK

AUKS ASHORE AND AFLOAT

When Captain E. F. Aikman returned on leave in September, 1963 (his home is at St. Andrews, Fife), he found his youngest son, Andrew, entertaining a Common Guillemot in the garden, which he had found oiled on the beach. This one took all the fish offered to it, recognised the tin in which the food was kept, and would come to meet anyone who was carrying it.

When Andrew decided that the bird was fit to go back to sea it lay quietly in his hands until they came in sight of the beach. Then it immediately began to struggle wildly, pecking furiously at his hands. When released it proceeded "with all despatch in execution of previous orders."

Then came the Captain's turn. At about 1900 hrs. on 27th March, 1964, in 46°24'N. 41°43'W., it then being quite dark, the O.O.W. reported that there was a bird on the fore deck, which proved to be a Brunnich's Guillemot *Uria lomvia*. It was in winter plumage and somewhat heavily oiled on the abdomen.

Aikman put it in his bathroom (Doctor at Sea, *Sea Swallow*, 1963). It refused to eat. On 30th March he called in his 3rd Officer. Together they set to work to feed it forcibly with pieces of herring soaked in salt water three or four times a day. Sometimes it would shake its head and throw the piece out, on one occasion scoring a direct hit on the 3rd Officer's face. But usually it took the food readily enough, and began to improve, standing up and preening from time to time.

Six days after its arrival on board it was being fed in a similar way by Mr. Yealland and a keeper at the London Zoo. Alas all was to no avail as it died shortly afterwards, but its journey had not ended. It was transferred to the British Museum, Natural History.

Postscript.—In telling me of these events Aikman mentions that shortly before the Brunnich's Guillemot was reported to him, and again on a very similar occasion a few years previously when an 'oiled' Little Auk *Plautus alle* had been found on board, a bird of identical species in each case had been seen flying round the ship at heights of fifty to sixty feet, an unusual height for these birds at sea.

A BRAMBLING CROSSES THE PACIFIC

Some time ago 3rd Officer Brackenridge sent me three excellent coloured transparencies, two of which showed a Brambling feeding on board. He added: "This little fellow came aboard as we were making our departure from the coast of Japan. In actual fact there were two small land birds on board, but unfortunately for one of them a falcon boarded the vessel a couple of days from the coast and gobbled it up. The Brambling took shelter in the master's day room where I took charge of it."

It fed readily on bird seed, and when the ship reached Vancouver it made straight for the shore.

Incidentally the third transparency was a very nice picture of a Sabine's Gull in flight taken at Port Albernie Inlet, Vancouver Island, in October, 1963.

EXTRACTS FROM METEOROLOGICAL REPORTS

The many bird reports included in meteorological log reports from Merchant Ships, and passed on to us by the Meteorological Office, often describe unusual occurrences. While not necessarily of intrinsic ornithological interest they add a savour to birdwatching at sea. Here then are some recent examples:—

DOVES MAKE THEIR HOME ON BOARD SHIP

On 5th August, 1963, a white dove flew on board s.s. Esso Petroleum, 250 miles north of Madeira and 500 miles west of Cape St. Vincent. It adopted the wheel house as its home and there it stayed although quite free to leave.

Two months later, on 6th October, 1963, a wild Barbary Dove *Streptopelia poseogrisea* also came on board 70 miles northwest of Algiers. After three months or so it seemed clear that both birds had no intention of leaving; the ship had been dry-docking for a fortnight at Newcastle-upon-Tyne, and running continuously between the U.K. and eastern Mediterranean.

Finally, when 3rd Officer Birchmore, who watched over the birds, left the ship he presented them to the Exmouth Zoo, where both were identified as females.

BLACK-BACKED GULL ATTACKS CORMORANT

When m.v. Cardiganshire was not far off Selsay Bill on her way down the English Channel on 15th February, 1964, 3rd Officer Carter saw a Common Cormorant flying about 30 feet above the sea. Suddenly, from a height of about 80 feet a Black-backed Gull (sp) swooped down on it, seizing it by the neck, holding on grimly for about a quarter of a minute until the Cormorant fell into the sea, to be surrounded as it lay there by a mob of squawking gulls. The final outcome of the attack could not be observed.

SOUTHERN GREAT SKUA ON BOARD

We have not had previous records of this species alighting on a ship at sea, but something on the forecastle of m.v. Herford (N.Z. Shipping Co.) when in the South Pacific attracted a southern skua to attempt a deck landing. The bird ended up in a heap on deck, flapped towards the guard rails and took off. A quarter of an hour later it made a perfect landing on the foremost truck, a favourite perch for Peregrine Falcons at sea.

AUSTRALIAN GANNETS GET SORE HEADS

When m.v. Otaki (N.Z. Shipping Co.) was entering King George's Sound, Albany, Western Australia, one night, she switched on an overside light on the approach of the Pilot Vessel.

Several Australian Gannets resting on the water immediately took off and, flying into the lighted area, dashed themselves repeatedly against the black painted hull of the ship.

BIRDS OF PREY DEVOURING SMALL BIRDS ON BOARD

During the third week in October, 1963 (13th Oct. to 21st Oct.) there were instances of unusually large "falls" of small birds reported from one or two ships in the Mediterranean off the North African coast. As

M.V. Surrey (Federal Steam Navigation Co.) was on passage between Port Said and Cape Bon pied wagtails, starlings, doves, finches, a quail and other unidentified small birds were all over the ship's structure. On 17th October a large owl and a hawk joined the assembly and both proceeded to pounce on bird after bird, devouring them on the after deck samson post.

CONCENTRATION OF SKUAS IN WESTERN NORTH ATLANTIC

On 23rd March, 1964, Captain R. Walgate, M.V. Beaverash observed no less than 76 skuas between 1000 hrs. and 1745 hrs. He was able to identify 13 Pomarine Skuas and 3 Long-tailed Skuas. The remainder were clearly identified as Skua (sp) by their dark angled wings, dark capped heads and flight pattern. At the time the ship was between 47° and 48°N. and 43° and 41°W.

OBSERVATIONS OF CASPIAN TERNS IN THE WELLAND CANAL AND TORONTO HARBOUR

Between 8th and 13th May, 1964, Captain R. Walgate observed over 300 Caspian Terns in Toronto Harbour. Later, on 16th May, in the seaway near St. Lambert's Lock (Montreal) he watched large numbers of these birds fluttering over their disappearing nesting sites near St. Helen's Island in a marsh now being filled in to accommodate a Worlds' Fair in 1967. Local birdwatching societies, he states, have protested in vain.

WALVIS BAY, 30TH OCTOBER, 1963

To a birdwatcher, as Capt. C. C. Atkinson remarks, this visit to Walvis Bay, Southwest Africa, provided quite a spectacle. Many hundreds of Cape Cormorants were feeding continuously in the bay, 32 Eastern White Pelicans were resting on the sand spit, and about 50 White-breasted Cormorants were present. But late in the afternoon an enormous flock of some thousand Greater Flamingoes started to cross the bay flying northwards. The birds were concentrated in a broad band in the van with separate lines of Flamingoes streaming astern.

PIED PUFFIN AND PIEBALD KITTIWAKE

Chief Engineer L. J. Macimmes has sent me the following report of an unusual sighting:—

On 7th August, 1964, during a sailing holiday we passed close to 6 Puffins. One of these birds was a freak. The head, back and tail were pure white and only the wings were black. The bill was the usual summer pattern. We were able to inspect this odd bird closely as it frequently rose in the water to preen. The position at time of sighting was 2½ miles NE of Craighleith Island, near North Berwick.

Captain R. Walgate has also reported seeing a Piebald Kittiwake in the North Atlantic on 5th October, 1964 in 54° 53'N. 41° 43'W. It carried a single dark band across the right wing a short distance from its black wing tip and a brown breast. [Confirmation of greater detail has not yet been received, and the brown breast may have been due to oil contamination. Editor.]

PHOTOGRAPHY OF BIRDS AT SEA AS AN AID TO IDENTIFICATION

Detailed descriptions of plumage and soft parts, and in particular accurate measurements will usually give the answer to a bird's identity, but facts and figures alone give little idea of what the bird really looks like to a would-be observer.

There is usually someone on board ship who is a keen photographer and would be glad to cooperate with a member of R.N.B.W.S. in trying his skill at bird photography, for herein lies a field of great variety.

BIRDS IN FLIGHT

Photographs of birds in flight out in the oceans are hard to come by and something of a triumph to obtain; yet occasions do arise when sea birds approach close enough to ships to enable good photographs to be taken.

Those who may be sceptical about the possibilities have only to study, for example, John Barlee's 'Birds on the Wing'—Collins, 12/6d., to realise the wonderful results he has obtained, and for those who have not had experience in this field of photography some very brief notes may provide a starting point.

John Barlee's pictures were taken with a Contax II 35 m.m. camera using a 13.5 c.m. telephoto lens. A telephoto lens is, of course, essential, and nowadays not only black and white but also colour transparencies can be obtained with modern high speed film and using shutter speeds of 1/500 second. Great care is necessary in processing and subsequently handling such small film when ultimate enlargements will be necessary.

A miniature camera has many advantages; it is light to handle, quick in the changing of film, and with a coupled rangefinder for focussing the bird is in view before, during and after exposure.

Another 35 m.m. camera, the Exakta with a similar telephoto lens, makes use of a reflex view finder which can be fitted with a prism to show the bird moving in the same direction as the camera. Stopping down in this type does of course reduce the brightness of the image shown.

As a bird flying across the field of view at normal range at 30 m.p.h. moves one inch during an exposure of 1/500 second the secret of success, as in game bird shooting, is to 'swing through' and so follow the bird as the shutter is released. A steady swing will keep the bird stationary on the film during exposure.

In taking birds in flight as an aid to identification the aim should be to get pictures showing the bird both as seen from below and from above, thus disclosing the underparts and underwing pattern and vice versa.

BIRDS WHICH ALIGHT ON BOARD

Birds which come aboard are often tired and easily approached, and in some cases can be taken in the hand. Any type of camera can achieve successful results. When birds can be taken in the hand every opportunity should be taken to obtain close-up photographs, and the following three aspects are the most valuable.

- (a) A view of the bird with wings extended looking down upon its back and taken from the tail end. This can be done with the bird resting on the deck against a suitable background using an assistant to extend the wings gently.

Eighty-eight

It is most useful to have already prepared a square of painted canvas (usually white for dark birds or dark grey for light birds) with a scale in inches marked clearly across it against which the wing span can be deduced.

Another method is for an assistant to hold the bird vertically with wings extended showing its back view to the camera.

(b) A view of its underparts and underwing with wings extended.

(c) A close-up side view of head, neck and bill.

IT IS IMPORTANT THAT DETAILS OF THE DATE, GEOGRAPHICAL POSITION AND NAME OF PHOTOGRAPHER AND SHIP SHOULD ACCOMPANY EACH PHOTOGRAPH, TOGETHER WITH ANY OTHER POINTS OF INTEREST.

The photographs of Swinhoe's Storm-Petrel in this issue provide a guide to the value of such pictures, while the illustration of Albatrosses in flight in *Sea Swallow* 1963 show results which can be obtained with 35 m.m. cameras.

G.S.T.

R.N.B.W.S. REPRESENTATIVES OVERSEAS

R.N.B.W.S. WILL ALWAYS WELCOME OFFERS FROM ORNITHOLOGISTS RESIDENT OVERSEAS, PARTICULARLY IN THE VICINITY OF PORTS, WILLING TO ACT AS R.N.B.W.S. REPRESENTATIVES TO WHOM R.N.B.W.S. MEMBERS COULD REFER WHEN IN THE VICINITY.

AUSTRALIA

- WESTERN AUSTRALIA. Julian Ford, Esq., 75 Swan Road, Attadale, PERTH.
Hon. Branch Sec. R.A.O.U.
- VICTORIA. Roy Wheeler, Esq., 19 Roslyn Road, Belmont,
GEELOG.
*Member Bird Observers' Club of Victoria Council,
R.A.O.U. Tel: LA 6331.*
- NEW SOUTH WALES. Captain G. I. D. Hutcheson, C.B.E., R.A.N.
c/o Vickers Australia Pty., Ltd., Kindersley House,
33 Bligh Street, SYDNEY.
Member R.N.B.W.S.
K. A. Hindwood, Esq., 105 Middle Harbour Road,
LINDFIELD. *R.A.O.U.*
J. D. Gibson, Esq., 12 Redman Avenue, THIRROUL.
R.A.O.U.

DENMARK

- Lektor Hans Hvass, M.Sc., Grøndalsvej 53, COPENHAGEN.
Hon. Member R.N.B.W.S.

HOLLAND

- Prof. Dr. K. H. Voous, Zoologisch Museum, Plantage Middenlaan 53,
AMSTERDAM (C). *Hon. Member R.N.B.W.S.*

HONG KONG

- F. O. P. Hechtel, Esq., *Hon. Sec. Hong Kong Birdwatching Society,*
c/o Chartered Bank, P.O. Box 21, HONG KONG.

MALAYSIA

- Captain L. F. Howell, M.N., c/o Shell (Eastern) Ltd., P.O. Box 148,
Shell House, Collyer Quay, SINGAPORE.
*Member R.N.B.W.S. Marine Supt. at Singapore for Shell (Eastern)
Ltd.*

MALTA

- Dr. C. de Lucca, B.Sc., M.D., 10 Church Street, Gharghur, MALTA, G.C.
Hon. Member R.N.B.W.S. President Malta Ornithological Society.

NEW ZEALAND

- Dr. R. A. Falla, C.M.G., M.A., D.R.S.C., Director Dominion Museum,
WELLINGTON, C3. *Hon. Member R.N.B.W.S.*

PERSIAN GULF

V. A. D. Sales, Esq., 54/12 Street North, Ahmadi. 1. KUWAIT.
Member R.N.B.W.S. Tel: 7784 (Home).

SOUTH AFRICA

Dr. J. M. Winterbottom, Director, Percy FitzPatrick Institute of African Ornithology, University of Capetown, Rondersbosch, Cape Province.

U.S.A.

Lieut. Commander R. Stackpole, U.S.N.R., Normandy, Ocean Avenue, Newport R.I. *Member R.N.B.W.S.*

WEST INDIES

Dr. C. B. Lewis, O.B.E., Director and Curator, The Science Museum, Institute of Jamaica, KINGSTON, JAMAICA. *Hon Member R.N.B.W.S.*

IN ADDITION THE FOLLOWING NATURAL HISTORY MUSEUMS OVERSEAS WHICH RECEIVE COPIES OF 'SEA SWALLOW' ARE GIVEN BELOW (names of contacts in brackets).

- AUSTRALIA. C.S.I.R.O. Division of Wildlife Research, CANBERRA, A.C.T. (W. B. Hitchcock).
- CANADA. National Museum of Canada, OTTAWA.
Redpath Museum, MONTREAL.
- FRANCE. Museum of Natural History, PARIS. (Monsieur Jouanin).
- W. GERMANY. Zoological Museum, BONN. (Dr. Niethammer).
- HOLLAND. Rijksmuseum of Natural History, LEIDEN.
- HONOLULU. Berenice P. Bishop Museum
- NEW ZEALAND. University of Canterbury, CHRISTCHURCH
(Dr. Bernard Stonehouse).
- U.S.A. The American Museum of Natural History, NEW YORK
(Librarian).
Peabody Museum, NEW HAVEN, CONNECTICUT (Dr. Ripley).
Smithsonian Institution (Division of Birds),
WASHINGTON 25, D.C. (Asst. Curator, George E. Watson:
(Pacific project, Winston E. Banko).

THE ROYAL NAVAL BIRDWATCHING SOCIETY

Receipts and Payments Account for the Year ended 30th November, 1963

Ninety-two

1962														
£	s.	d.	£	s.	d.	RECEIPTS			£	s.	d.	£	s.	d.
186	1	5				Balance 1st December 1962:	Cash at Bank	...	...	...		148	5	8
						Subscriptions								
						Current Year—								
			28	14	0	Under Covenant	...	...	...	...	...	29	14	0
			51	3	0	Other	...	...	...	...	...	50	12	9
			2	14	0	Arrears	...	...	...	...	...	1	9	0
			9	1	0	In Advance	...	...	...	...	...	5	0	0
91	12	0												
						Donations:								
			3	4	0	Under Covenant	...	...	...	...	...	3	4	0
			18	11	6	Other	...	...	...	...	...	11	4	6
21	15	6												
						Income Tax recovered on 61 members' convenanted sub-								
						scriptions and donations up to 5th April 1962 (See Note 1)						20	3	11
						Sale of Members' Ties (5)	...	...	...	...	...	4	12	6
8	4	0				Other Receipts:								
			13	12	0	Sales of <i>Sea Swallows</i>	...	...	...	...	...	26	17	0
			19	3		Sales of Sea Passage Lists	...	...	...	...	...
			14	13	0	Advertisements in <i>Sea Swallows</i>	...	...	...	...	...	24	0	0
29	4	3												
12	18	1				Sales of 1962 Christmas Cards	...	...	...	...	...	50	17	0
						Sales of 1963 Christmas Cards (See Note 2)	...	...	...	...	...	41	0	7
												2	10	0

NOTES:

- Refund of Income Tax amounting to £19 11. 3 on 59 members' convenanted subscriptions and donations for the financial year ended 5th April 1963 is at present receiving attention from the Commissioners of Inland Revenue.
- The balance of receipts for the sale of 1963 Christmas cards is not yet available for the inclusion in this year's accounts.

£349 15 3

£368 13 11

1962						PAYMENTS			£ s. d.			£ s. d.		
£	s.	d.	£	s.	d.									
20	14	7				Postage and Stationery ...	...	...				19	12	7
						Printing:								
			115	12	6	<i>Sea Swallows</i> 1962 (500) ...	...	...	137	13	11			
			4	10	0	Sea Bird Census Forms (500) ...	...	...	4	10	0			
			—	—	—	Land Bird Report Forms (500) ...	...	...	4	10	0			
			—	—	—	100 R.N.B.W.S. "With Compliments" Slip ...	...	...	10	6				
			1	1	0	Minutes of 1962 Annual General Meeting ...	...	...	1	9	0			
			8	0	0	Bulletins 53-55 ...	...	...	8	10	0			
			—	—	—	Special letters to advertise <i>Sea Swallows</i> to Museums, etc. ...	...	...	6	0				
			10	0		R.N.B.W.S. Leaflets and Rules and Constitution ...	...	...	16	6				
			1	15	0	Letterhead Sheets ...	...	...	—	—	—	
131	8	6				Expenses of Annual General Meeting 1962 ...	...	...				158	5	11
10	8	0				Subscriptions:						7	0	0
			2	0	0	British Trust of Ornithology ...	...	...	2	0	0			
			1	0	0	Council for Nature ...	...	...	1	10	0			
3	0	0				Printing 1963 Christmas Cards (2,000) (including postage						3	10	0
						advanced to Mr. Rayfield) ...	...	...				40	0	4
34	12	10				Bank Charges ...	...	...				2	2	0
1	5	8				Balance 30th November 1963: Cash at Bank ...	...	...				138	3	1
148	5	8												
												£368	13	11
£349	15	3												

I have examined the above Accounts with the books and records of the Society and certify that it is correct and in accordance therewith.

ST. MARY AXE HOUSE,
56/60 ST. MARY AXE,
LONDON, E.C. 3.
4th December, 1963.

R. G. PEGLER,
Chartered Accountant,
Hon. Auditor.

NEW MEMBERS 1963 - 1964

- Bamford, R. D. D. Lieut. Commander R.N. H.M.S. *Corunna*.
Berry, N. Ex Chief Petty Officer Writer R.N.
Chilman, P. W. C. Chief Officer M.N. M.V. *Amastra*, *Shell Tankers* U.K. Ltd.
Curtis, W. F. Radio Operator M.N. S.S. *Mobilskill*, *Mobil Shipping Co. Ltd.*
Erskine, A. B. Lieut. Commander R.N. H.M.S. *Wizard*.
Frew, E. J. Sub Lieut. R.N. Naval Party 5555, B.F.P.O. 170 (Christmas Island, Pacific).
Graham, E.T. Captain R.N. *The Mere Cottage*, *Lynchmere*, *Haslemere*, *Surrey*.
Hunt, R. M. Second Officer M.N. M.V. *Regent Royal*, *Bowring and Co. Ltd.*
Matthews, A. D. S.B.P.O. R.N. R.N. *Hospital*, *Plymouth*.
Morgan, P. J. Captain, D.S.C., R.N. H.M.S. *Bulwark*.
Pel, N. W. *Royal Rotterdam Lloyd*, 7 *Veerhaven*, *Rotterdam*.
Peal, R. E. F. Ex Lieut. Commander R.N.V.R.
Preece, T. C. S.B.P.O. R.N. R.N. *Families Centre*, *Malta*, *G.C.*
Ritchie, G. S. Captain, D.S.C., R.N. H.M.S. *Vidal*.
Rowe, H. P. S.A.(S) R.N. H.M.S. *Bulwark*.
Thain, J. Skipper, *British Fishing Fleets*. M.V. *Clavis*.

CORPORATE MEMBERSHIP

- Midshipman Training Centre*, *Blue Funnel Line* (*Alfred Holt and Co. Ltd.*), *Liverpool*.